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April 17, 2020

Via Electronic Filing

OREGON PUBLIC UTILITY COMMISSION
ATTENTION: FILING CENTER
PO BOX: 1088
SALEM OR 97308-1088

UG 388: In the Matter of NORTHWEST NATURAL GAS COMPANY, dba NW NATURAL, Request for a General Rate Revision

Enclosed for electronic filing are Certificate of Service,
UG 388 Service List and the following exhibits:

Exhibit 100 to 104
Exhibit 200 to 204
Exhibit 300 to 308:
Exhibit 300 - confidential pages 28 and 29
Exhibit 306 to 308 are confidential

Exhibit 400 to 419:
Exhibit 408: one confidential Excel spreadsheet
Exhibit 412 to 415 are confidential

Exhibit 500 to 505
Exhibit 600 to 602

Exhibit 700 to 705:
Exhibit 700: confidential pages 5 and 6
Exhibit 703 is confidential

Exhibit 800 to 801
Exhibit 800: confidential pages 9, 17, 31, 33, 34, 36 and 37

Exhibit 900 to 902
Exhibit 1000 to 1004
Exhibit 1100 to 1102 and
Exhibit 1200 to 1203

A confidential and non-confidential CD will be mailed via UPS to parties who have signed Protective Order No: 19-437 in UG 388.

/s/ Kay Barnes

Kay Barnes
PUC- Utility Program
(503) 378-5763
kay.barnes@state.or.us

CERTIFICATE OF SERVICE

UG 388

I certify that I have, this day, served the foregoing document upon all parties of record in this proceeding by delivering a copy in person or by mailing a copy properly addressed with first class postage prepaid, or by electronic mail pursuant to OAR 860-001-0180, to the following parties or attorneys of parties.

Dated this 17th day of April, 2020 at Salem, Oregon

Kay Barnes

Kay Barnes
Public Utility Commission
201 High Street SE Suite 100
Salem, Oregon 97301-3612
Telephone: (503) 378-5763

UG 388 Service List

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CASE: UG 388
WITNESS: MARIANNE GARDNER

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 100

Opening Testimony

April 17, 2020

Q. Please state your name, occupation, and business address.

A. My name is Marianne Gardner. I am the Program Manager, Rates and Accounting, employed in the Energy Rates, Finance and Audit Division of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE, Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. My witness qualification statement is found in Exhibit Staff/101.

Q. What is the purpose of your testimony?

A. I am the revenue requirements summary witness for the Public Utility Commission of Oregon Staff (Staff) in this proceeding. I introduce Staff-sponsored adjustments and issues regarding the Northwest Natural Gas Company (Northwest Natural, NWN, or Company) request for a general rate revision, docketed as Docket No. UG 388. As such, I verify NWN's proposed revenue requirement utilizing Staff's revenue requirement model. This model is also used to calculate Staff's modified revenue requirement after incorporating Staff's proposed adjustments to NWN's revenue requirement.

Additionally, I provide background regarding specific issues I reviewed, and my analysis and recommendations.

Q. Will other Staff witnesses submit testimony regarding the issues they reviewed?

A. Yes. Each Staff assigned to Docket UG 388 is submitting separate testimony. In Part 1 of my testimony, I introduce the Staff witnesses and their respective assignments, and estimate the revenue requirement impact of Staff

recommended adjustments to the Company's initial filing. These are the issues identified to date. Staff's recommendations and issues may change after reviewing testimony and analysis by other parties.

Q. Did you prepare an exhibit for this docket?

A. Yes. I prepared the following exhibits:

Exhibit 101	Witness Qualification Statement
Exhibit 102	Escalation – Excerpts from Consumer Price Index – All Urban Consumers for the U.S., published by OEA, March 2020 (released February 12, 2020)
Exhibit 103	Staff Outstanding Data Requests to NWN
Exhibit 104	Escalation

Q. How is your testimony organized?

A. My testimony is organized as follows:

Part 1. Revenue Requirement 3
Part 2. Specific Issues 5
Issue 1. Interest Synchronization 6
Issue 2. Working Capital 8
Issue 3. Depreciation and Amortization 10
Issue 4. Rate Case Expense 11
Issue 5. Escalation 12

PART 1. REVENUE REQUIREMENT

Q. Please provide a list of the rate case topics that Staff reviewed and introduce the responsible Staff.

A. I have provided a listing of rate topics in Table A.

Table A

Incremental Revenue Requirement							
			NW Natural/1002, Walker/1 at 1, col e.				$ 71,447
Testimony	Staff	Issue No.	Proposed Staff Adjustments	Rev.	Exp.	RB	Rev. Req. Effect
Stipulation	Muldoon		COC	-	-	-	(6,908)
100	Gardner	1	Interest rate synchronization	-	-	-	185
100	Gardner	2	Working Capital	-	-	-	-
100	Gardner	3	Other Amortization (Pending)	-	-	-	-
100	Gardner	4	Rate Case & Expense (Pending)	-	-	-	-
100	Gardner	5	Escalation - CPI (Pending)	-	-	-	-
200	Fox	1	Plant TY additions	-	(752)	(16,337)	(2,236)
200	Fox	2	Plant - Large projects	-	-	(18,758)	(1,679)
200	Fox	3	RWIP	-	-	(37,387)	(3,347)
200	Fox	4	Mist - Dehydrator	-	-	-	-
200	Fox	5	State Excise Tax - CAT	-	1,975	-	2,783
200	Fox	5.2	EDIT - temp. (PGA related)	-	-	-	-
300	Fjeldheim	1	Gas Storage in rate base	-	-	-	-
300	Fjeldheim	2	Gas Storage - operating expense	-	(1,018)	-	(1,047)
300	Fjeldheim	3	Other Gas & PGA	-	-	-	-
300	Fjeldheim	4a	IT Project - MS Office 365	-	(244)	-	(251)
300	Fjeldheim	4b	IT Project - Skype administrator	-	(171)	-	(176)
300	Fjeldheim	5a	Property taxes	-	(30)	-	(31)
300	Fjeldheim	5b	Franchise Fees	-	(31)	-	(32)
300	Fjeldheim	5c	OPUC regulatory fee	-	313	-	322
300	Fjeldheim	5d	ODOE fee	-	(37)	-	(38)
300	Fjeldheim	6	D&O insurance	-	(251)	-	(258)
300	Fjeldheim	7	Prepaid expenses	-	-	-	-
300	Fjeldheim	8	Accounting Records - FERC 816-847	-	(386)	-	(397)

Testimony	Staff	Issue No.	Proposed Staff Adjustments	Rev.	Exp.	RB	Rev. Req. Effect
400	Cohen	1	Uncollectibles	-	-	-	-
400	Cohen	2	Wages & salaries	-	(9,472)	(9,192)	(10,567)
500	Beitzel	1	Materials & Supplies	-	-	(1,694)	(152)
500	Beitzel	2	Advertising	-	63	-	65
500	Beitzel	3	Placeholder - O&M escalation	-	-	-	-
500	Beitzel	4	Demonstration & Selling	-	(740)	-	(761)
500	Beitzel	5	Placeholder - A&G expense	-	-	-	-
600	Moore	1	O&M	-	(1,709)	-	(1,758)
600	Moore	2	Plant Maintenance	-	(875)	-	(900)
600	Moore	3	Employee Benefits	-	(348)	-	(358)
700	Soldavini	1	Misc revenues	206	-	-	(206)
700	Soldavini	1.2	Placeholder - curtailment revenue	-	-	-	-
700	Soldavini	2	Regulatory expense allocation	-	(130)	-	(148)
700	Soldavini	3	Shareholder & Investor Allocation	-	(93)	-	(82)
800	Storm	1	250 Taylor	-	-	-	-
800	Storm	2	Seismic risk	-	-	-	-
800	Storm	3	Pension Periodic Costs	-	(3,406)	-	(3,504)
800	Storm	4	Other Post-retirement Benefits	-	-	-	-
800	Storm	5	Prepaid pension	-	-	-	-
800	Storm	6	Other post retirement benefits	-	-	-	-
900	Peng	1	Depreciation + Reserve	-	-	-	-
900	Peng	2	AFUDC	-	-	-	-
1000	Gibbens	1	Issue - Placeholder -Load Forecast/Warm/Decoupling	-	-	-	-
1100	Compton	1	Issue - LRIC, Rate Spread, Rate Design	-	-	-	-
1200	Rossow	1	Dues & memberships	-	(316)	-	(325)
1200	Rossow	2.1	O&M - M&E,Misc,Awards, Gifts	-	(641)	-	-
1200	Rossow	2.2	O&M - Travel	-	(931)	-	(1,617)
Total Proposed Adjustments (Base Rates):				206	(19,230)	(83,367)	(33,424)
Incremental Revenue Requirements Change (Base Rates):							**38,023**

PART 2. SPECIFIC ISSUES

Q. What areas of NWN's filing are you primarily responsible for reviewing?

A. I reviewed the portions of the filing related to interest synchronization, working capital allowance, amortization, rate case expense, and escalation. In order to gain additional insight, I reviewed the Company's responses to Staff's standard data requests (SDRs), issued additional data requests (DRs), and reviewed the Company's responses to Staff's requests and well as other parties.

ISSUE 1. INTEREST SYNCHRONIZATION

Q. Please provide a summary of the Commission's historical treatment of interest synchronization, the Company's filed proposal, and Staff's analysis of the issue.

A. According to long-standing Commission policy, for ratemaking purposes, Staff routinely synchronizes interest expense to reflect changes in the regulated utility's cost of capital as initially filed in a general rate case. Accordingly, the interest synchronization adjustment depends on proposed adjustments to cost of capital (CoC) in this docket. In this case, all parties have resolved cost of capital issues raised and filed a stipulation to that effect on March 12, 2020. The Stipulation, if approved by the Commission, will impact the Company's filed cost of capital, of which the weighted cost of debt is a component. Because interest expense on long-term debt is tax deductible, the proposed cost of long-term debt impacts income tax expense for ratemaking purposes.

The cost of long-term debt proposed in NWN's direct testimony is 4.596 percent, with a weighted cost of long-term debt of 2.298.[1] According to the Stipulation, the agreed upon cost of long-term debt is 4.529 percent, with a weighted cost of long-term debt of 2.265 percent.[2]

Q. What is Staff's recommendation?

[1] NW Natural/200, Wilson/8 at 14.
[2] UG 388-Stipulation/2 at 8.

A. As the revenue requirement summary witness, I have synchronized the interest expense for the income tax calculation to reflect the stipulated weighted cost of debt of 2.265 percent. Calculated on the Company's test year rate base of $1,471,695[3] and its filed weighted cost of long-term debt of 2.298, I recommend a reduction to interest expense for income tax purposes of $485,000. The exact of amount of the adjustment will be trued-up as a function of the final agreed upon Net Rate Base.

The interest amount is calculated on the test year as follows:

+ Net Rate Base

X Staff's Recommended (or Authorized) Weighted Cost of Debt

= Allowable Interest Deduction

- Company's Reported Interest Deduction

= Interest Coordination Adjustment

[3] NW Natural/1001, Walker/1 at 26, col. b.

ISSUE 2. WORKING CAPITAL

Q. Please provide a summary of the Company's filed proposal for working capital.

A. The Company did not discuss working capital in its testimony. However, in its test year, the Company included two components of working capital, gas and material and supplies (M&S) inventories of $29.758 million and $14.474 million, respectively. The Company did not include any prepayments.[4]

Q. Please explain the Commission's historical treatment of working capital?

A. For ratemaking purposes, the components of working capital are generally rate base items identified as fuel inventory, M&S inventory, prepayments, and cash working capital. The Commission typically authorizes utilities to include an allowance for material and supplies in rate base, which has included FERC Account Nos. 154, Plant Material and Operating Supplies; 163, Store Expense Undistributed; 164.2, Liquefied Natural Gas Stored, and 165, Prepayments – Gas Storage.[5] The Commission's long-standing policy has typically been to disallow gas companies a separate amount for cash working capital. If calculated based on a current lead-lag study, the Commission allows electric companies to include cash working capital in rate base. In Avista's four most recent rate cases, UG 246, UG 284, UG 288 and UG 325, Staff stipulated to

[4] Staff /102, Company response to SDR No. 84.

[5] *See, e.g., In re California-Pacific Utilities Company,* UF 3275, Order No. 77-394, (1977 WL 438034); *In re Cascade Natural Gas Corporation,* UF 3094 Order No. 74-898 (1974 WL 391913).

allowing Avista to include rate base materials and supplies in inventory costs, but excluded cash working capital. The Commission adopted those stipulations.[6]

Q. What is Staff's recommendation?

A. Staff's recommendation is to allow NWN to include fuel and M&S inventories in the test year rate base. Other Staff Witnesses have reviewed the amount of fuel and M&S inventories included in the test year rate base. Staff Witness Brian Fjeldheim will make a recommendation regarding fuel inventory in his testimony. Staff Witness Russ Beitzel will discuss his analysis of M&S inventory in his testimony.

[6] *In the Matter of Avista Corporation*, UG 246, Order No. 14-015 at 3; *In the Matter of Avista Corporation*, UG 284, Order No. 15-109 at 3 (April 9, 2015); *In the Matter of Avista Corporation*, UG 288, Order No. 16-076 at App. A, page 3 (February 29, 2016); *In the Matter of Avista Corporation*, UG 325, Order No. 17-344 at 3 (September 13, 2017).

ISSUE 3. DEPRECIATION AND AMORTIZATION

Q. Please provide a summary of the Company's filed proposal.

A. I confirmed with Staff witness Ms. Peng that she reviewed the Company's filed amortization in conjunction with her review of depreciation. The Company combined amortization and depreciation and the related reserves in the Excel Exhibit 1000 that she examined as part of her analysis. Witness Peng sets forth the Company's initial proposal, and describes her analysis in her testimony.

Q. Does Staff propose any additional adjustments to amortization or depreciation?

A. Staff does not propose any additional adjustments at this time. I issued a separate data request to ensure Exhibit 1000 captured all amortization that was recorded in the test year.[7] The Company's response to this data request is pending. Therefore, I may propose an amortization adjustment subject to this response. Additionally, as the revenue requirement summary witness, I recommend that the test year amortization and depreciation expense, the related reserves, and the final revenue requirement be updated to correspond with the final level of gross plant and intangible assets determined by the Commission.

[7] Staff/103, Gardner.

ISSUE 4. RATE CASE EXPENSE

Q. Please describe the expense at issue.

A. The expense at issue is rate case expense. Frequently, a Company escalates the general rate case expenses incurred in the base year to the test year thereby overstating a cost in base rates that does not recur annually.

Q. Please describe the Company's treatment of rate case expenses in the test year.

A. The Company did not explicitly provide this information in testimony or in its workpapers.

Q. What is Commission Staff's policy regarding general rate case expense in the test year?

A. Staff's policy is to recommend that the actual expense incurred be amortized into rates over the time-period that is typical for the timing of general rate cases for that utility. In other rate cases, this time period has often time been stipulated to by parties.

Q. Does Staff have a recommendation at this time?

A. No. Staff has issued a few DRs regarding the historical general rate case expense and the projected test year expense.[8] Therefore, the need for a test year adjustment is still pending the Company's response.

[8] Staff/103, Gardner.

ISSUE 5. ESCALATION

Q. Please describe the expense at issue.

A. The expense at issue is the Company's non-payroll Operations and Maintenance (O&M) expense. These costs include FERC Account Nos. 816-935. My testimony serves two purposes: 1) discuss the Company's methodology for escalating certain accounts using the West Region Urban CPI; 2) provide an overview of the challenges Staff encountered during the discovery process that hindered their ability to determine prudency of test year O&M costs.

Q. Do other Staff witnesses provide testimony regarding FERC Account Nos. 816-935?

A. Yes. Staff Witnesses, Mitch Moore, Paul Rossow, Brian Fjeldheim, and Russ Beitzel reviewed separate categories of O&M expenses. Their testimony sets forth their analyses and recommendations.

Q. Please describe in general the adjustments the Company proposed for non-payroll O&M costs and its explanation or rationale for the increase in costs from the base year.

A. The Company escalated general non-payroll O&M costs at January 1, 2020, to the test year using the West Region Urban CPI (WR Urban CPI) published in September 2019. However, the Company adjusted some items for other definite growth rates.[9] The Company's testimony lists a number of items by

[9] NW Natural/900, Davilla/9 at 10.

FERC account it adjusted based other terms. These included negotiated contracts, new projects, and other allocation methods.[10] Staff assigned to the explicit FERC accounts to which these items were recorded investigated the appropriateness of these changes.

Q. Did the Company provide a detailed explanation or workpaper in its filed testimony that quantified its CPI escalation adjustment?

A. The Company did not provide in testimony or in its filed workpapers any detail regarding the calculation nor the total escalated amount using the WR Urban CPI. However, Staff was able to piece the information together through the Company's responses to Staff DR Nos. 139 and 282.

Q. What was the Company's escalation adjustment using the WRU-CPI?

A. According to the Company's response to Staff DR No. 359, the total is $1,830,982. I verified this amount and calculation in their cost model provided in Staff DR No. 282.

Q. Please summarize Staff's policy for escalation.

A. It is Staff policy to use the Consumer Price Index – All Urban Consumers for the U.S. ("All Urban CPI") as published by the State of Oregon Office of Economic Analysis (OEA) for year over year escalation of expenses. The All Urban CPI measures price changes in a fixed market basket of goods and services in 200 categories, generally including housing, apparel, transportation,

[10] NW Natural/900, Davilla/10 – 16.

medical care, recreation, education, and others to urban consumers.[11] The most recent release of the All Urban CPI was the March 2020 report, released February 12, 2020. According to Appendix A of this report, the percentage change for CPI for 2019 to 2020 and 2020 to 2021 is 1.8 percent and 1.7 percent, respectively.[12]

Q. Did Staff estimate the change in escalation substituting the All Urban CPI in the Company's model for the WR Urban CPI?

A. Yes. Staff substituted the All Urban CPI in the NWN model, which resulted in a decrease to the Company's test year O&M expense by approximately $495,573.

Q. Does Staff recommend this adjustment to the test year?

A. No, not at this time. I request to reserve the right to propose a separate adjustment at a later date.

Q. Why are you reserving the right to propose an adjustment later in the rate case?

A. As mentioned earlier in this testimony, other Staff are delayed in the discovery process of O&M due to insufficiencies in NWN's filing. Before proposing an escalation adjustment, it is necessary to review other Staff's adjustments to determine whether an escalation adjustment is appropriate or if it would result in "double counting" or an over-adjustment.

[11] *In the Matter of PacifiCorp's Proposal to Restructure and Reprice its Services in Accordance with the Provisions of SB 1149*, UE 116, Order 01-787 at 40 n10 (September 7, 2001); *In the Matter of Northwest Natural*, UG 132, Order No. 99-697 at 43 (November 12, 1999).

[12] Staff/102, Gardner/1.

Q. Is NWN aware of Staff's concerns with what Staff perceives as deficiencies in its filing?

A. Yes. The concerns raised are the same concerns Staff had in NWN's prior rate case, UG 344. In UG 344, Staff, after discussions with NWN, concluded the deficiencies were in part because NWN had not been in for a rate case for a significant amount of time and the Company failed to anticipate the information they would need to provide as part of their burden of proof. Staff reviewed the Company's responses to UG 388 SDRs, and was immediately aware that the Company's response to SDR No. 57 (SDR 57) was identical to its initial response in UG 344. Once again, SDR 57 was lacking the requested detail needed to analyze O&M transactions.

Q. Please explain why SDR 57 is important to Staff's analysis of O&M.

A. SDR 57 requests non-payroll transactional base year data by FERC account and other fields and requires a business description for each transaction. It is by reviewing the transactional descriptions that Staff makes an initial determination whether the expense appears to be a reasonable cost incurred in delivering regulated service to Oregon customers. In NWN's case, this was 94,862 lines of data, and many of those lines lacked descriptions that would inform one of the regulated business purpose for the expense.

Q. Did Staff request NWN supplement and remedy its response to SDR 57?

A. Yes. NWN filed its initial response to SDR 57 on December 20, 2019. Staff issued follow-up data requests and had multiple conversations with NWN

personnel. In reply, NWN filed an amended SDR 57 on January 21, 2020. Subsequently, NWN supplemented this amended SDR 57 with DR No. 173 on February 4, 2020. NWN issued its final supplement to DR No. 57, DR No. 173, on March 6, 2020. All of these amendments and supplements were attributable to shortcomings in the responses.

Q. Was the Company's attempt at remedy sufficient?

A. No. Due to limitations with its accounting system, many descriptions are still inadequate and Staff is issuing additional DRs requesting supporting underlying documentation and explanations.

Q. Where does Staff stand in its discovery of O&M?

A. Each Staff witness in their testimony has described their analyses and recommendations that they are able to propose at this stage of discovery.

Q. Do you have a recommendation for action?

A. Staff recommends the Horizon 1 project[13] result in accounting reports and queries that will facilitate discovery especially as it concerns transparency with transactional accounting data. Staff proposes NWN include at a minimum one ERFA Staff in the planning/needs assessment phase for regulatory reports from its new ERP platform. Additionally, prior to filing its next rate case, the Company will need to work with Staff and ensure that its responses to SDRs at the time of filing are complete and satisfactory. Staff recommends, as part of this proceeding, a workshop and timeline be set to accomplish this.

[13] NW Natural/600, Downing/1-10.

Q. Does this conclude your testimony?

A. Yes.

CASE: UG 388
WITNESS: MARIANNE GARDNER

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 101

Witness Qualifications Statement

April 17, 2020

WITNESS QUALIFICATION STATEMENT

NAME: Marianne Gardner

EMPLOYER: Public Utility Commission of Oregon

TITLE: Rates and Accounting Manager
Rates, Finance and Audit Division

ADDRESS: 201 High Street SE., Suite 100 Salem,
OR. 97301

EDUCATION: Master of Business Administration
Oregon State University, Corvallis, Oregon

Bachelor of Science in Accounting
Montana State University, Bozeman, Montana
CPA, Oregon

EXPERIENCE: I have been employed by the Public Utility Commission of Oregon since March 2013, with my current position being a Rates and Accounting Manager, in the Rates, Finance and Audit Division. My responsibilities include research, analysis, and recommendations on a range of cost, revenue and policy issues for electric and natural gas utilities. As the revenue requirement summary witness, I have provided testimony in dockets UE 263, UG 246, UE 283, UE 294, UG 284, UG 287, UG 288, and UG 305.

I have approximately 20 years of professional accounting experience, including:

- Thirteen years as a cost accountant with responsibilities including cost accounting, budgeting, product costing, and the preparation of management reports;
- Four years experience in public accounting working in the areas of audit, tax and financial accounting for individual and small business clientele; and,
- Three years experience in non-profit accounting for an agency administrating funds under the Federal Job Training Partnership Act.

CASE: UG 388
WITNESS: MARIANNE GARDNER

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 102

Exhibits in Support
Of Opening Testimony

April 17, 2020

Mar 2020 - Other Economic Indicators

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
GDP (Bil of 2012 $),												
Chain Weight (in billions of $)	18,638.2	19,069.5	19,461.0	19,866.3	20,211.7	20,516.2	20,892.4	21,353.2	21,826.7	22,306.2	22,795.8	23,285.4
% Ch	2.9	2.3	2.1	2.1	1.7	1.5	1.8	2.2	2.2	2.2	2.2	2.1
Price and Wage Indicators												
GDP Implicit Price Deflator,												
Chain Weight U.S., 2012=100	110.4	112.4	114.6	117.3	120.3	123.3	126.2	129.0	131.9	134.9	138.0	141.1
% Ch	2.4	1.8	2.0	2.3	2.5	2.5	2.3	2.3	2.2	2.3	2.3	2.3
Personal Consumption Deflator,												
Chain Weight U.S., 2012=100	108.1	109.7	111.5	113.5	116.0	118.6	121.1	123.7	126.3	129.0	131.6	134.3
% Ch	2.1	1.4	1.6	1.8	2.2	2.2	2.2	2.1	2.1	2.1	2.0	2.0
CPI, Urban Consumers,												
1982-84=100												
West Region	263.3	270.3	276.8	282.3	289.8	297.6	305.4	313.3	321.3	329.3	337.4	345.6
% Ch	3.3	2.7	2.4	2.0	2.6	2.7	2.6	2.6	2.6	2.5	2.5	2.4
U.S.	251.1	255.7	260.4	264.9	271.5	278.5	285.4	292.3	299.2	306.2	313.2	320.2
% Ch	2.4	1.8	1.8	1.7	2.5	2.6	2.5	2.4	2.4	2.3	2.3	2.2
Oregon Average Wage												
Rate (Thous $)	55.5	57.4	59.7	62.1	64.7	67.4	70.3	73.3	76.4	79.5	82.8	86.2
% Ch	3.7	3.4	4.0	4.0	4.2	4.2	4.3	4.2	4.2	4.1	4.1	4.1
U.S. Average Wage												
Wage Rate (Thous $)	59.6	61.6	63.5	65.9	68.6	71.6	74.8	78.1	81.6	85.1	88.7	92.5
% Ch	3.3	3.3	3.0	3.8	4.2	4.3	4.4	4.5	4.4	4.3	4.2	4.2
Housing Indicators												
FHFA Oregon Housing Price Index												
1991 Q1=100	423.7	444.6	472.2	491.7	510.6	530.2	550.1	570.0	590.6	611.8	633.2	649.0
% Ch	7.8	4.9	6.2	4.1	3.8	3.8	3.8	3.6	3.6	3.6	3.5	2.5
FHFA National Housing Price Index												
1991 Q1=100	261.0	273.8	282.9	290.3	298.5	307.5	316.9	326.7	336.5	346.4	356.5	366.8
% Ch	6.6	4.9	3.3	2.6	2.8	3.0	3.1	3.1	3.0	2.9	2.9	2.9
Housing Starts												
Oregon (Thous)	19.6	20.7	22.4	23.3	23.6	23.4	23.7	23.3	23.3	23.0	22.9	22.8
% Ch	1.6	5.8	8.2	4.0	1.2	(0.9)	1.1	(1.4)	(0.2)	(1.0)	(0.5)	(0.5)
U.S. (Millions)	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2
% Ch	3.4	1.9	3.0	(1.9)	(0.4)	(1.2)	(0.8)	1.3	(1.7)	(2.7)	(1.2)	(0.8)
Other Indicators												
Unemployment Rate (%)												
Oregon	4.1	4.1	3.8	3.9	4.0	4.2	4.3	4.4	4.3	4.3	4.3	4.3
Point Change	0.0	(0.0)	(0.3)	0.0	0.2	0.2	0.1	0.0	(0.0)	(0.0)	0.0	0.0
U.S.	3.9	3.7	3.5	3.5	3.8	4.2	4.5	4.5	4.4	4.4	4.4	4.4
Point Change	(0.5)	(0.2)	(0.2)	0.1	0.2	0.4	0.3	0.0	(0.1)	(0.0)	(0.0)	0.0
Industrial Production Index												
U.S, 2012 = 100	108.6	109.4	109.7	111.4	112.8	113.8	115.5	117.9	120.3	122.6	124.9	127.4
% Ch	3.9	0.8	0.2	1.6	1.2	0.9	1.5	2.0	2.0	1.9	1.9	2.0
Prime Rate (Percent)	4.9	5.3	4.7	4.9	5.3	5.5	5.8	5.8	5.8	5.8	5.8	5.8
% Ch	19.7	7.7	(10.1)	3.0	7.5	4.7	4.5	0.0	0.0	0.0	0.0	0.0
Population (Millions)												
Oregon	4.20	4.24	4.28	4.32	4.36	4.39	4.43	4.47	4.51	4.54	4.58	4.61
% Ch	1.3	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.7
U.S.	327.7	330.1	332.4	334.7	337.1	339.4	341.6	343.9	346.1	348.3	350.5	352.6
% Ch	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6
Timber Harvest (Mil Bd Ft)												
Oregon	3,619.9	3,565.2	3,616.1	3,670.4	3,765.3	3,812.8	3,835.8	3,899.8	3,906.2	3,911.9	3,915.1	4,072.7
% Ch	(2.0)	(1.5)	1.4	1.5	2.6	1.3	0.6	1.7	0.2	0.1	0.1	4.0

CASE: UG 388
WITNESS: MARIANNE GARDNER

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 103

Exhibits in Support
Of Opening Testimony

April 17, 2020

Oregon
Kate Brown, Governor

Public Utility Commission
201 High St SE Suite 100
Salem, OR 97301
Mailing Address: PO Box 1088
Salem, OR 97308-1088
Consumer Services
1-800-522-2404
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Administrative Services
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April 15, 2020

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RE:	Docket No.	Staff Request Nos.	Response Due By
	UG 388	DR 405-408	April 29, 2020

Please provide responses to the following request for data by the due date. Please note that all responses must be posted to the PUC Huddle account. Contact the undersigned before the response due date noted above if the request is unclear or if you need more time. In the event any of the responses to the requests below include spreadsheets, the spreadsheets should be in electronic form with cell formulae intact.

Topic or Keyword: Rate Case Expenses, Amortization

405. Please provide a summary by account, vendor and/or expense source, month and year, of the amount of rate case expense incurred on an Oregon allocated basis in UG 344.

406. Please provide a summary by account, vendor and/or expense source, month and year, of the amount of rate case expense incurred and forecasted on an Oregon allocated basis for the UG 388 rate case through October 2020.

407. Please provide the amount of rate case expense forecasted by account on an Oregon allocated basis for the UG 388 Test Year.

408. Please provide a listing of any debits or credits, assets or liabilities for which amortization was included in the test year. If any of these were not included in the Company's UG 388 Exh. 1000-WP2, please explain why not and provide an explanation of the genesis of each, the test year rate base net amount, the test year rate case amortization expense, and the amortization rate.

Please name your responsive file to include the Data Request number. Once you have posted your response to the Data Request to the PUC Huddle account, use the "Sharing" feature of Huddle to generate an email to authorized parties notifying them that the response has been posted. In the body of the generated email, list the Data Request number associated with your response.

You must mark confidential responses as such and post them to Huddle in the appropriate "Confidential" folder. Access to Confidential folders is limited to individuals who have signed the protective order. You should not send confidential documents (hard copy or electronic) separately to the Commission or its Staff; you should post confidential responses only to the Huddle account.

Should you need to request an extension to the due date for the data responses you will need to contact the staff attorney assigned to the case for approval.

Questions regarding the use of Huddle should be directed to puc.datarequests@state.or.us.

/s/ Marianne Gardner, E-RFA, Manager Rates and Accounting

Staff Initiator: Marianne Gardner Marianne.Gardner@oregon.or.us 503-559-4011

CASE: UG 388
WITNESS: MARIANNE GARDNER

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 104

Exhibits in Support
Of Opening Testimony

April 17, 2020

NW Natural
Test Year Twelve Months Ended October 31, 2021
Operations and Maintenance Expense

Staff calc | **NWN/Exhibit 1007 Walker/ Page 3**

Line No.	FERC Acct.	Description	Test year w All Urban CPI Oregon	Test Year West Region CPI Oregon	Difference in Escalation Oregon
1		Natural Gas Storage			
2		Underground Storage Expense			
3		Operation			
4	816	Wells Expense	$310,805	$314,668	($3,863)
5	818	Compressor Station Expense	150,536	151,086	(550)
6	819	Compressor Station Fuel	0	0	(0)
7	820	Measuring and Regulator Station Expense	2,895,969	2,906,595	(10,627)
8	821	Purification Expense	(388)	(393)	5
9					-
10		Maintenance			-
11	832	Wells Expense	183,290	183,617	(326)
12	834	Compressor Station Expense	925,761	925,761	-
13		Total Underground Storage Expense	4,465,973	4,481,334	(15,361)
14					-
15		Other Storage Expense			-
16		Operation			-
17	840	Supervision and Engineering	122,292	122,508	(216)
18		Total Other Storage Expense	122,292	122,508	(216)
19					-
20		Liquified Natural Gas Expense			-
21		Operation			-
22	844	Supervision and Engineering	1,850,051	1,857,302	(7,251)
23	845	LNG Fuel	(169,562)	(171,722)	2,160
24					-
25		Maintenance			-
26	847	Supervision and Engineering	1,217,759	1,222,266	(4,508)
27		Total Liquified Natural Gas Expense	2,898,248	2,907,846	(9,599)
28					-
29		Total Natural Gas Storage	7,486,513	7,511,688	(25,175)
30					-
31		Transmission Expense			-
32		Operation			-
33	856	Mains Expense	2,507,631	2,528,598	(20,967)
34					-
35		Maintenance			-
36	863	Maintenance of Mains	390,988	395,063	(4,075)
37		Total Transmission Expense	2,898,619	2,923,661	(25,042)
38					-
39		Distribution Expense			-
40		Operation			-
41	870	Supervision and Engineering	3,531,482	3,537,276	(5,794)
42	874	Mains and Services Expense	13,815,996	13,830,845	(14,849)
43	875	Measuring and Regulator Station Expense	182,177	183,506	(1,329)
44	877	Measuring and Regulator Station Expense	585,097	588,667	(3,570)
45	878	Meter and House Regulator Expense	6,030,507	6,038,302	(7,795)
46	879	Customer Installation Expense	11,177,070	11,194,913	(17,843)
47	880	Other Expense	1,432,859	1,434,365	(1,506)
48	881	Rents	195,756	198,334	(2,577)
49					-
50		Maintenance			0
51	885	Supervision and Engineering	7,773,123	7,796,597	(23,474)
52	887	Mains	3,188,066	3,199,142	(11,076)
53	889	Measuring and Regulator Station Expense	1,660,231	1,666,029	(5,798)
54	891	Measuring and Regulator Station Expense	187,298	187,864	(566)
55	892	Services	660,725	663,548	(2,823)
56	893	Meters and House Regulators	3,387,662	3,392,934	(5,272)
57	894	Other Equipment	44,551	44,812	(261)
58		Total Distribution Expense	53,852,599	53,957,134	(104,535)

NW Natural
Test Year Twelve Months Ended October 31, 2021
Operations and Maintenance Expense

			Staff calc	NWN/Exhibit 1007 Walker/ Page 3	
			Test year w All Urban CPI	Test Year West Region CPI	Difference in Escalation
Line No.	FERC Acct.	Description	Oregon	Oregon	Oregon
59					-
60		Customer Accounts Expense			0
61		Operation			-
62	901	Supervision	1,930,562	1,930,604	(41)
63	902	Meter Reading Expenses	952,698	953,517	(819)
64	903	Customer Records and Collection Expense	20,388,123	20,449,195	(61,072)
65	904	Uncollectible Accounts	-	-	-
66		Total Customer Accounts Expense	23,271,383	23,333,316	(61,933)
67					-
68		Customer Service and Informational			-
69		Operation			-
70	907	Supervision	3,172	3,206	(34)
71	908	Customer Assistance Expense	3,499,981	3,550,936	(50,955)
72	909	Customer Information Expense	2,856,975	2,857,869	(895)
73	910	Miscellaneous Customer Service Expense	188,694	189,122	(428)
74		Total Customer Service and Informational	6,548,821	6,601,133	(52,312)
75					-
76		Sales Expense			-
77		Operation			-
78	911	Supervision	16,873	16,851	22
79	912	Demonstration and Selling Expense	1,731,935	1,743,659	(11,723)
80	913	Advertising	-	-	-
81	916	Miscellaneous Sales Expense	-	-	-
82		Total Sales Expense	1,748,808	1,760,509	(11,701)
83					-
84		Administrative and General Expense			-
85		Operation			-
86	921	Office Supplies and Expense	62,477,432	62,692,057	(214,625)
87	922	Administrative Expenses Transferred - Cre	(21,986,515)	(22,027,632)	41,118
88	924	Property Insurance Premium	3,396,577	3,396,577	-
89	925	Injuries and Damages	209,326	209,861	(536)
90	926	Employee Pensions and Benefits	22,247,035	22,257,736	(10,700)
91	928	Regulatory Commission Expense	-	-	-
92	930	Miscellaneous General Expense	3,261,675	3,266,976	(5,302)
93	931	Rents	9,472,099	9,473,646	(1,547)
94					-
95		Maintenance			-
96	935	Maintenance of General Plant	4,903,643	4,926,928	(23,284)
97					-
98		Total Administrative and General Expense	83,981,272	84,196,147	(214,875)
99					-
100		Total Operations and Maintenance Expense	179,788,016	180,283,589	(495,573)
101					0
102	407	Environmental Rider	5,000,000	5,000,000	0
103					0
104		Total O&M Expense including Environmental Rid	184,788,016	185,283,589	(495,573)
105					0
106		Equity Floatation Costs	3,429,974	3,429,974	0
107					0
108			188,217,990	188,713,563	(495,573)

CASE: UG 388
WITNESS: JOHN L. FOX

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 200

Opening Testimony

April 17, 2020

Q. Please state your name, occupation, and business address.

A. My name is John L. Fox. I am a Senior Financial Analyst employed in the Energy Rates, Finance and Audit Division of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street S.E., Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. My witness qualification statement is found in Exhibit Staff/201.

Q. What is the purpose of your testimony?

A. My testimony addresses income taxes and utility plant, other than the Company's new office space at 250 Taylor Street.

Q. Did you prepare exhibits for this docket?

A. Yes. In addition to my witness qualification statement, I prepared the following exhibits:

Exhibit Staff/202, 18 CFR Part 201 Account 108

Exhibit Staff/203, UG 388 DR 354 Attachment 1

Exhibit Staff/204, Responses to Staff Data Requests

Q. How is your testimony organized?

A. My testimony is organized as follows:

Issue 1. Test Year Plant Additions 2
Issue 2. Plant Additions prior to the Rate Effective Date 13
Issue 3. Removal Work in Process 18
Issue 4. Mist Large Dehydrator 24
Issue 5. Income Taxes 26

ISSUE 1. TEST YEAR PLANT ADDITIONS

Q. Please summarize the amount and timing of the Company's proposed utility plant in service.

A. The Company is proposing utility plant in service of $3.189 billion dollars, accumulated depreciation of ($1.372) billion, yielding a net utility plant of $1.817 billion.[1] The Company's testimony indicates this amount is calculated using the 13-month average of monthly averages (AMA) method.[2] Staff review of the underlying work paper indicates this amount is calculated using forecasts of plant in the 2021 test year. Staff notes that the Company's work paper detailing the increase in rate base is confidential.[3]

Q. Why would the underlying work be confidential?

A. It is unclear. Staff notes that the analogous work in the Company's previous rate case was not.[4] The Company's response to Staff Data Request No. 139 in this case indicates that "All forward looking monthly data that has not been disclosed to the public has been deemed confidential." Accordingly, discussion of the methodology underlying the rate base calculation would not be confidential; however, in Staff's view there is a public policy issue here. Specifically, the Company is seeking the benefit of a forward looking test year and there ought to be a degree of public transparency about how the requested rate base is calculated.

[1] NW Natural/1001, Walker/1.
[2] NW Natural/1000, Walker/26.
[3] UG 388 - Exh. 1000 - WP2 - Gross Plant, Accum Deprec and Deprec Exp - CONFIDENTIAL.xlsx.
[4] Docket No. UG 344 - 200 wp7 - Gross Plant and Accum Deprec.xlsx.

Q. Is the Company's methodology consistent with its previous rate case?

A. The Company's proposal to include plant in rate base that is not scheduled to be on-line prior to the rate effective date is consistent the Company's initial proposal in its UG 344 rate case filing.

Q. What was the result of this methodology in UG 344?

A. The Company's initial proposal was opposed by Staff and intervening parties based on provisions of Oregon law. Ultimately, parties stipulated that plant additions after the rate effective date would be excluded from final rates except for a limited amount of distribution plant associated with customer growth.[5]

Q. Does the Company's testimony directly state that the filing includes average gross plant additions in the test year?

A. No, it does not. However, the Company is explicit about using the test year AMA method for other rate base components such as aid in advance of construction, customer deposits, etc.[6] The Company's test year is November 1, 2020 to October 31, 2021. The rate effective date of the Company's tariffs in this rate case is November 1, 2020.

Q. Is it Staff's understanding that plant cannot come into rate base until it is used and useful?

A. Yes. The prohibition of plant in rate base that is not presently used for providing utility service to the customer goes all the way back to an initiative

[5] See *In the Matter of NORTHWEST NATURAL GAS COMPANY, dba NW NATURAL, Request for a General Rate Revision*, Docket No. UG 344, Order No. 18-419 at 10.
[6] NW Natural/1000, Walker/22-25.

petition in 1978.[7] Also, other investor-owned utilities doing business in Oregon generally limit their filings to plant that is used and useful on the rate effective date.[8]

Q. What is the Oregon law requiring utility plant to be presently used before it may be included in rates?

A. ORS 757.355 requires utility plant to be presently used for providing utility service to customers. In general, the Commission has applied a "used and useful" standard requiring the property to be placed into service prior to the effective date of the rates:

> (1) Except as provided in subsection (2) of this section, a public utility may not, directly or indirectly, by any device, charge, demand, collect or receive from any customer rates that include the costs of construction, building, installation or real or personal property not presently used for providing utility service to the customer.
>
> (2) The Public Utility Commission may allow rates for a water utility that include the costs of a specific capital improvement if the water utility is required to use the additional revenues solely for the purpose of completing the capital improvement. [1979 c.3 §2; 2003 c.202 §2]

Q. Please discuss the limited exception for customer growth.

[7] Oregon Initiative Petition 9 (1978).
[8] See *In the Matter of AVISTA CORPORATION, dba AVISTA UTILITIES, Request for a General Rate Revision*, Docket No. UG 389, Avista/600, Shultz/5; *In the Matter of PACIFICORP, dba PACIFIC POWER, Request for a General Rate Revision,* Docket No. UE 374, PAC/1300, McCoy/10; *In the Matter of CASCADE NATURAL GAS CORPORATION, Request for a General Rate Revision,* Docket No. UG 347, CNGC/300, Peters/8; and *In the Matter of PORTLAND GENERAL ELECTRIC COMPANY, Request for a General Rate Revision,* Docket No. UE 335, PGE/200, Tooman-Espinoza/19.

A. The Commission has, in the past, allowed a limited exception for capital additions related to customer growth as illustrated by the following excerpts:

Docket No. UE 210 Staff/100, Garcia/8:

> [O]ne common exception has been made related to an electric utility's ongoing need to increase distribution plant as its customer base grows. Some examples of these costs are for the poles, wires, meters, and other plant necessary to distribute electricity to customers. These costs are ongoing in nature and can be reasonably assumed to be made on a regular basis. Historically, the Commission has allowed a reasonable percentage increase in distribution plant rate base for a future test year, relative to the expected growth in a utility's customer base. The other point to this accommodation is that, aside from installing new distribution plant, the utility has ongoing obligations related to safety and reliability to repair, replace, or reinforce this plant.

NW Natural Docket No. UG 344, Order No. 18-419 at 10:

> The stipulating parties agree to reduce rate base by $33,730,000 to reflect removal of projects that will not go into service until after November 1, 2018, except that the stipulating parties agree to include a portion of those capital additions related to customer acquisitions. This results in a reduction to the revenue requirement of $5,389,000. The stipulating parties also include an addition of $13,516,000 to rate base in recognition of the capital associated with new customers added during the test year. This adjustment results in an increase to the revenue requirement of $1,671,000. While AWEC and CUB do not agree that the adjustment for new customers should apply in other instances, they both accept this adjustment as compromise in the context of the overall settlement of the issues in this stipulation.

Q. Has Staff reviewed the Company's proposed distribution related expenses?

A. Yes. Staff has reviewed the proposed additions of meters and services in the test year as presented in the Company's work papers and responses to various

Staff data requests and recommends that the proposed additions be accepted as filed.

Q. Please explain Staff's proposed adjustment to remove test year capital additions.

A. As noted above, the Company is proposing a test year average utility plant in service of $3.189 billion dollars and accumulated depreciation of ($1.372) billion. The details of the FERC account balances comprising these totals are available in the plant functionalization work papers,[9] which also group total utility plant into the following categories:

- Meter Reading Billing, etc. Costs
- Meters & Services Costs
- System Core Main Costs
- Gas Storage Costs

The Company's response to Staff Data Request No. 243 provides projected plant balances as of October 31, 2020, in the same format.

Based on this information and excluding meters and services[10] as discussed above, Staff proposes the following adjustments:

- Reduce plant in service by $43.6 million which is the amount of plant included in the test year on an Average of Monthly Averages (AMA) basis.

[9] Staff/204, NW Natural Response to Staff DR 113 Attachment 9.xlsx.
[10] Meters and services added in the test year are $6.944 million on an AMA basis.

- A reduction in accumulated depreciation, also on an AMA basis, of $27.3 million.
- A reduction in test year depreciation expense of $752 thousand.

Q. Please discuss the plant additions that occur during the test year.

A. NW Natural's filing includes many significant discrete capital projects in the test year:

- May 2021 - Application Lifecycle Mgmt – PCAD $2.287 million
- Oct 2021 - Astoria/Warrenton Resource Center $8.733 million
- Oct 2021 – Kuebler Blvd Reinforcement $19.74 million
- Oct 2021 – Lincoln City Retrofit $8.722 million
- Oct 2021 - Miller Station TI $424 thousand
- Oct 2021 – Mist Pipeline Upgrades $1.13 million
- Oct 2021 - Mist Well Rework 2021 $3.698 million
- Oct 2021 - Newport LNG Tank Foundation Evaluation $399 thousand
- Oct 2021 - Newport Switchgear Replacement 12 Kv $924 thousand
- Dec 2020 - Port. LNG PLC Replacement $847 thousand
- Dec 2020 - Portland LNG ICS Network Segmentation $794 thousand
- Jan through Oct 2021 - Resource Center CNG Systems $1.711 million
- Jan through Oct 2021 - Resource Center Decant Systems $186 thousand
- Dec 2020 - White Salmon $1.296 million

Overall, the filing includes discrete and non-discrete (run rate) gross plant additions of $163.4 million during the test year ($61.9 million rate base using a 13-month average of monthly average (AMA) methodology).

Staff notes that, since there are many projects being placed into service near the end of the test year, the magnitude of the adjustment necessary to remove them is less.

Q. Would Staff propose to remove some of the projects listed above irrespective of ORS 757.355?

A. Yes. As a result of Staff inquiry, the Company has also stated that the Resource Center CNG project will not occur as projected, the White Salmon project is actually located in Washington and ought to be removed from the rate case, and that a run rate project to improve the industrial control system at North Mist was inadvertently included in the rate case. These projects are included in Staff's overall adjustment but would also need to be removed irrespective of ORS 757.355.

Furthermore, Staff has concerns about the reliability of the Company's estimates for projects occurring late in the test year, which are discussed further below.

And also, because the test year projects must be removed by law because they are planned to come on-line after the rate effective date, Staff conducted limited discovery on the viability and reasonableness of those projects compared to discovery done for plant projected to be completed prior to the rate effective date. Additional prudence review of the disallowed test year projects must occur in a subsequent rate proceeding.

Additional concerns regarding projects placed into service late in the test year.

Q. Please discuss Staff's concerns regarding inclusion of projects that are scheduled to be on-line very close to the rate effective date.

A. In general, projects are included in rate base if on-line and used prior to the rate effective date of a general rate filing. Often, a utility will ask to include in rate base projects that are scheduled to come on-line prior to, but close to the rate effective date. The fact the projects are not complete and final costs not

known while Staff and Intervenors are reviewing a utility's rate case makes evaluation of the prudence of the investment difficult.

A number of the major projects discussed in the Company's testimony are substantially changed from what was acknowledged in the IRP. Additionally, several recent projects were completed at a significantly higher cost than planned. In other words, what is being built and the cost of what is built can vary significantly from the information presented to the Commission in various dockets. Accordingly, caution should be exercised when examining the prudence of projects before inclusion in NW Natural's rates.

Q. Please explain what you mean by the need for caution?

A. In general, projects are included in rate base if on-line and used prior to the rate effective date of a general rate filing. Often, a utility will ask to include in rate base projects that are scheduled to come on-line prior to, but close to the rate effective date. The fact the projects are not complete and final costs are not known while Staff and Intervenors are reviewing a utility's rate case makes evaluation of the prudence of the investment difficult.

Q. Is there a process Staff and parties have used to address rate base additions scheduled to occur after the evidentiary stage of a rate case but prior to the rate effective date?

A. Yes. In the past, the utility and parties have agreed that certain projects scheduled to come on-line shortly before the effective date can be included in rate base at a stipulated amount that parties agree is reasonable if the utility can file an attestation prior to the rate effective date that the project is on-line.

Q. Do you have concerns regarding the ability to review the prudence of investments that are scheduled to come on-line after the evidentiary stage but prior to the rate effective date?

A. Yes. The Company's actions and investments do not necessarily match the Company's Integrated Resource Plan (IRP) and otherwise change as the project progresses. These circumstances mean Staff and Intervenors are sometimes left evaluating a moving target.

For example, NW Natural's Sandy Feeder, Hood River, and South Oregon City projects were rerouted and substantially changed subsequent to acknowledgement in the IRP. The Company's responses to Staff data requests indicate that the Sandy Feeder project is actually being built at a reduced cost to ratepayers compared to the IRP and that the changes to the Hood River and Oregon City projects will not result in an accelerated need for future reinforcement.

The Company's response to Staff DR No.137 elaborates on the Company's project management phases; Initiation, planning, execution, and close out. In particular, the project process is not actually initiated until after the IRP is acknowledged:

> During the IRP process, there is not a budget created yet with COH, AFUDC, etc., because we do not create a "project" in our Project Management process until the IRP is acknowledged (or not) by the Commission. For these system reinforcements and betterments, we use proposed pipeline size, length and route to create cost estimates based on projected internal labor and material costs and/or external labor from similar projects for the IRP analysis. For projects at Newport, Portland LNG, and Mist, we may commission a study to provide a cost estimate. If the system reinforcement or betterment is

> acknowledged by the Commission in the IRP process, then we kick-off the Initiation phase, where we create a Planning budget.[11]

The Company's response also indicates that "not all of the major distribution system and facility projects presented in testimony had full project budget details as of February 8, 2019."[12]

The Kuebler Boulevard Reinforcement is listed as being in the initiation stage, with a projected move to execution status in May 2021. [13] This is a full six months after the rate effective date of November 1, 2020.

Staff notes that a policy to eschew detailed planning until after the IRP is acknowledged is particularly risk averse and serves to shift risk to customers as significant changes in project plans are occurring. Staff questions whether, in the future, any of the Company's test year projects would be far enough along in the project process to merit consideration of advance prudence review with a tariff rider.

Staff also notes that the same logic would apply to other significant projects forecasted late in the test year even though they are not IRP projects:[14]

- Astoria Warrenton Resource Center
- Lincoln City Retrofit
- Various gas storage projects; Mist, Portland LNG, and Newport LNG.

[11] UG 388 DR 137 NWN Response.pdf at 2.
[12] *Id* at 3.
[13] *Id* at 3.
[14] See Staff/203, NW Natural Response to Staff DR No. See134 Attachment 1 w staff annotations.xlsx.

Regarding cost, the Company's response to discovery indicates that several large projects completed in 2016 and 2017 experienced large cost increases between the project planning and execution phases.[15]

Project	Project Number	Move to Planning - total project estimate (without COH)	Project Move to Planning date	Move to Execution - Total project estimate (without COH)	Project Move to Execution date
SE Eugene	201675	$3-4.5 million	5/10/2017	$8.09 million	4/30/2018
Newport LNG Glycol	201609	$495,000	6/7/2016	$1.0 million	5/18/2018
Newport LNG E3	201813	$735,470	11/21/2017	$1.32 million	5/21/2018
Newport LNG E5	201815	$661,820	11/21/2017	$1.29 million	5/18/2018

[15] Staff/204, NW Natural Response to Staff DR No. 192b.

ISSUE 2. PLANT ADDITIONS PRIOR TO THE RATE EFFECTIVE DATE

Q. Please describe Staff's approach regarding the review of utility plant.

A. After reviewing the Company's work papers submitted with the filing, Staff issued data requests in several major groupings with follow up requests based on Staff analysis of the data provided.

- Capital investments over $150 thousand through September 2019[16]
- Projected capital investments over $150 thousand[17]
- Projected non-discrete capital investments[18]
- Land and structures[19]
- Major distribution system and storage facility projects[20]
- Safety related projects[21]
- Allocations, overhead, capital budgeting, and construction work in process (CWIP)[22]
- Miscellaneous[23]

Q. Please discuss the requirement that rate base investments be prudently incurred and also used and useful providing utility service to customers.

[16] Staff/204, NW Natural Responses to DR Nos. 133, 235, 237, 238.
[17] Data requests; 134, 227, 228, 229, 230, 231, 232, 233, 234, 236.
[18] Data requests; 135, 239.
[19] Data requests; 136.
[20] Data requests; 137, 244, 245, 246, 247.
[21] Data requests; 138, 240, 241, 242.
[22] Data requests; 129, 130, 212, 131, 210, 211, 132, 213.
[23] Data requests; 139 (confidential), 140 (confidential), 192, 207, 208, 353, 209, 243, 354.

A. The purpose of a prudence review has been succinctly stated by the Commission in prior rate cases. For example, in a 2012 order, the Commission stated:

> *[W]e take this opportunity to clarify the prudence standard in ratemaking. Parties have raised questions about how the Commission applies the prudence standard, particularly with regard to the relevance of the decision-making process that a utility uses to make an investment.*
>
> *The prudence standard is traditionally used to address the proper valuation of utility investment in rate base. Any investment found to be unreasonable is deemed imprudent and subject to partial or full disallowance. An example of a modem articulation of the prudence standard is as follows:*
>
> *A prudence review must determine whether the company's actions, based on all that it knew or should have known at the time, were reasonable and prudent in light of the circumstances which then existed. It is clear that such a determination may not properly be made on the basis of hindsight judgments, nor is it appropriate for the [commission] to merely substitute its best judgment for the judgments made by the company's managers. The company's conduct should be judged by asking whether the conduct was reasonable at the time, under all circumstances, considering that the company had to solve its problems prospectively rather than in reliance on hindsight. In effect, our responsibility is to determine how reasonable people would have performed the task that confronted the company.*
>
> *Although the Oregon courts have not expressly discussed the applicability of the prudence standard in this state, this Commission has long used the standard when examining utility investments. Through various orders, the Commission has confirmed that prudence of an investment is measured from the point of time of the utility's actions and decisions without the advantage of hindsight, that the standard does not require optimal results, and the review uses an objective standard of reasonableness.* [24]

[24] See *In the Matter of PacifiCorp Request for a General Rate Revision,* Docket No. UE 246, Order No. 12-493 at 25 (Dec. 20, 2012).

The "used and useful" standard requires the property to be placed into service prior to the effective date of the rates (ORS 757.355), as cited above. The law applies to all utility plant including plant placed into service before the rate effective date and prior additions to rate base that are no longer used in providing utility service to customers.

Q. Has Staff identified any projects placed into service prior to the rate effective date that ought to be removed from rate base because they will not be used and useful?

A. Yes. Review of the Company's responses indicate the following individual projects will not be used and useful at the rate effective date and ought to be removed from rate base:

Mist Compressor Study and Replacement Project $689,074 System wide ($615,727 Oregon)

> The Company's response to Staff DR No. 227 indicates this is a study that pertains to future projects and specifically was incurred to gather the information necessary to present projects in the IRP process.

Lincoln City Land Purchase $1,012,017

> The new Lincoln City building is a test year addition after the rate effective date. The associated land purchase occurred earlier and needs to be removed from the case.

Portland LNG Liquefaction Alt. Study $968,643 system wide ($865,848 Oregon)

> The Company's response to Staff DR No. 213 indicates this is a study that pertains to future projects and acknowledges it should be removed from the case.
>
> (Staff notes there is a similar study for Newport that is being removed in the test year adjustment, which would presumably follow the same logic). Accordingly, Staff would propose removing the Newport project also irrespective of ORS 757.355.

Warrenton Land Purchase $880,152

The new Warrenton building is a test year addition after the rate effective date. The associated land purchase occurred earlier and needs to be removed from the case.

PLANT ADDITIONS (JUL 2020 TO OCT 2020)

Q. Please briefly describe the purpose of this adjustment.

A. There is a large amount of gross plant additions in the months of July through September 2020. The effective date of any rate change stemming from this case is November 1, 2020. Staff concludes there is currently insufficient evidence to show that plant scheduled to come on line on or after July 1, 2020, is reasonably certain to be in service prior to the November 1, 2020, rate effective date.

Q. Is Staff proposing an adjustment to remove certain projects in the months of July through October 2020?

A. Yes, Staff proposes to remove the following projects from rate base in this case:

- BI Strategy / Power BI Deployment $1,424,706 (Oregon)
- Digital Portal $10,168,592 (Oregon)
- Field & Web Mapping Implementation Phase 1 $3,790,532 (Oregon)

Q. What is the reasoning underlying this adjustment?

A. The property would be used and useful if placed in service prior to November 1, 2020, the effective date of rates in this case. However, Staff cannot conclude with reasonable certainty that the plant scheduled to come on

line in the months before the rate effective date will actually be on-line when the rates become effective.

In Docket No. UG 325, the Commission made the following statement regarding inclusion of plant in rate base:

> However, we would remind parties wishing to include plant not yet-in-service as part of the proposed revenue requirement in future rate cases, to be prepared to explain such proposals with particularity and to justify via clear and convincing evidence, the circumstances providing the rationale for their inclusion in their general rate case application. [25]

Based on the rate case schedule established at the prehearing conference February 11, 2020, Staff believes it is unrealistic to anticipate reviewing actual expenditures incurred after June 30, 2020. Accordingly, Staff is proposing an initial adjustment removing these projects with the understanding that assets will be added to rate base on a case by case basis as the Company provides clear and convincing evidence regarding prudence and attests that the assets will be used and useful on or before November 1, 2020.

Q. What is Staff's recommendation?

A. Staff recommends that the above listed projects, totaling $18.8 million on an Oregon allocated basis, be removed from the Company's proposed rate base in this case.

[25] *See In The Matter of Avista Corporation, dba Avista Utilities, Request for a General Rate Revision*, Docket No. UG 325, Order No. 17-344 (Sep 13, 2017).

ISSUE 3. REMOVAL WORK IN PROCESS

Q. Please discuss Staff's findings regarding removal work in process (RWIP).

A. Review of work papers and responses to data requests[26] indicate that the Company is reducing its accumulated depreciation account by the amount of RWIP ($39.354 million dollars system wide, $37.387 million Oregon). In other words, with the Company's proposed reduction for RWIP, the accumulated depreciation component of rate base is less than it otherwise would be thereby increasing rate base. The increase to rate base is the inverse of the reduction to accumulate depreciation.

Q. Is this adjustment discussed in the Company's testimony?

A. No. The adjustment can only be found by studying the supporting documentation. In Staff's view, this item is material and should have been stated separately as a rate base adjustment.[27]

Q. What is the Company's rationale for including RWIP as a rate base increase?

A. The Company states the following in response to a Staff data request.

> RWIP is short for Removal Work in Progress (GL 108001), though it actually represents the amount of removal cost incurred to date related to the retirement of assets. The inclusion of the amount should not be considered an "adjustment" but rather a necessary addition of a component of the accumulated depreciation reserve to accurately produce net plant in rate base. The presentation of gross plant and the accumulated reserve in the workpapers is done by FERC account, to allow for more granular consideration of utility

[26] Staff/204, UG 388 - Exh. 1000 - WP2 - Gross Plant, Accum Deprec and Deprec Exp - CONFIDENTIAL.xlsx., UG 388 DR 113 Attachment 9.xlsx, and UG 388 DR 243 Attachment 1.xlsx.
[27] I.e.,. NW Natural/1001, Walker/1, lines 19 through 26.

plant and the related reserve. The RWIP account, however, is not classified by FERC account, but because it is typically related to distribution plant, it is included in the distribution plant category of the reserve.[28]

Q. Can the Company cite prior Commission orders or testimony from previous rate cases to support including RWIP as a rate base increase?

A. No. Staff asked that specific question and received the following response.

> Although there has been no specific discussion of RWIP in our recent testimony, the RWIP account has been included as a component of accumulated depreciation in the Company's rate case workpapers in the last two rate cases (UG 221 and UG 344) In addition, the RWIP balance has been included in rate base in our annual RG 40 filing since at least 2011. It appears that the separate accounting of cost of removal amounts apart from the FERC account presentation was not in use in 2001, which was the basis of the UG 152 rate case.[29]

The Company subsequently provided the following supplemental response.[30]

> It has recently come to our attention that the Company's 2010 originally submitted Earnings Test was found to have errors in July 2011. The RWIP adjustment was one of the errors identified by the Company. RWIP was discussed with the Parties and all agreed that it should be included within the rate base calculation.[31] The Company re-filed the Earnings Test on July 22nd, 2011 including RWIP. Please see "UG 388 OPUC DR 354 Supplemental Attachment 1" "Reconciliation" tab, for a workpaper that reconciles the difference between rate base on our original Earnings Test filing and the re-filed version from July 22nd. Also included in the attachment is the summary page for each Earnings test submitted on the "April 29th Filing" and "July 22nd Filing" tabs.

[28] Staff/204, NW Natural Response to Staff DR No. 354, part a.
[29] *Id.*
[30] Staff/204, UG 388 DR 354 NWN Supplemental Response.pdf.
[31] UM 903, Staff's Opening Comments filed July 27th, 2011, pages 7&8; UM 903, NW Natural's Opening Comments filed July 27th, 2011, page 5.

Q. Is the evidence of previous approval in Docket No. UM 903 persuasive?

A. No. The July 27th Staff comments mention only the Company's "errors in its calculation of rate base" with no specific discussion or RWIP.[32] Similarly, the Company's comments mention only a "mistake in the accumulated depreciation reserve" with no specific discussion of RWIP.[33]

Nor is the RWIP issue discussed in the subsequent Commission order.[34]

Q. Is the RWIP adjustment reflected in the excel file provided as a supplement to Staff Data Request 354?[35]

A. Yes, however there is no indication this information was provided contemporaneously in 2011.

Q. Did the Company provide supporting information indicating the amount of RWIP included in UG 221 and UG 344?

A. Yes. The amounts included are $9.2 million dollars and $26.0 million, respectively.[36] Staff notes that the amount included in the current case represents a sizable escalation.

Q. Please elaborate on the implications of the escalating RWIP balance.

A. As noted above, the Company concedes that the accumulated RWIP is not classified by FERC account. Furthermore, if the Company were following the instructions for FERC account 108, the removal costs would decrease the

[32] *Id* Staff comments at 7-8.
[33] *Id* NW Natural comments at 5.
[34] See *In the Mater of Northwest Natural Gas Company, dba NW Natural, 2011 Spring Earnings Review*, Docket No. UM 903, Order No. 11-365.
[35] UG 388 DR 354 Supplemental Attachment 1.xlsx.
[36] Exhibit Staff/203, NW Natural Response to Staff DR No. 354 Attachment 1.

amount of accumulated depreciation underlying the periodic recalculation of the Company's depreciation rates. This leads to two ratemaking errors:

- Periodic depreciation expense is understated because it does not include the removal costs. In other words, the removal costs would have been reflected each year in the annual results of operations rather than being accumulated in a separate account.
- The separate RWIP account will have an endlessly increasing balance; $9.2 million, then $26 million, then $37.387 million, etc.

Q. Please summarize Staff's point of view?

A. First, Staff looks to the FERC instructions for the Account 108 Accumulated provision for depreciation of gas utility plant which states, in part, "*At the time of retirement* of depreciable gas utility plant, this account shall be charged with the book cost of the property retired and the cost of removal and shall be credited with the salvage value and any other amounts recovered, such as insurance."[37]

Second, Staff notes that construction work in process (CWIP) is not depreciated. Once the asset is completed, and placed into service, it is transferred from CWIP to Fixed Assets (aka plant in service) and then

[37] Staff/202,18 CFR Part 201 Account 108 (*emphasis added*).

depreciation commences. Oregon utilities are not allowed to include CWIP in rate base nor earn a return on it.[38,39]

Third, the Company is unable to cite prior Commission orders, and/or testimony in previous rate cases, which explicitly authorize including RWIP in in rate base.

Fourth, the Company's escalating RWIP balance has been earning a return in rate base since at least 2011, when the RWIP should have been included in accumulated depreciation and recovered over time as increased depreciation expense.

Q. Within the RWIP calculation itself, is there another unresolved issue?

A. Yes. The Company is calculating Oregon's share based on a factor of 95 percent, which the Company states "was derived from the most recently filed FERC FORM 2 in RG 37 (2018 FORM 2)."[40] Staff notes that this factor appears to be unrelated to, nor an obvious permutation of, the customary cost allocation factors[41] applied in the Company's jurisdictional allocation and thus ought to be investigated further.

[38] ORS 757.355 prohibits the inclusion of "property not presently used for providing utility service to the customer.

[39] *Commission Order No. 10-022 (UE 210) at 14 and 15 states: "ORS 757.355 prohibits a public utility from collecting in customer rates the costs of any property not presently used for providing utility service to those customers" . . . . "Given this evidence, and despite the parties' contentions about specific rate base adjustments, it is clear that the Stipulation will allow Pacific Power to collect in rates only the costs of property presently providing service to customers in conformance with ORS 757.355. We therefore deny ICNU's objection on this point."*

[40] Staff/203, NW Natural Response to Staff DR No. 354, part a.

[41] Total customers, Direct, 3-Factor & Direct, Firm Delivered Volumes, and 3-Factor.

Q. Is Staff proposing an adjustment to rate base for RWIP?

A. Yes, Staff proposes that the entire RWIP amount be excluded, thereby increasing accumulated depreciation by $37.387 million dollars and reducing rate base by the same amount.

ISSUE 4. MIST LARGE DEHYDRATOR

Q. Are there an additional rate base issues that Staff would like to bring to the attention of the parties at this time?

A. Yes. A delay in changing the glycol fluid (TEG) in the Large Mist Dehydrator.

Q. Please discuss the delay in changing the glycol fluid in the Large Mist Dehydrator.

A. Replacement of the Large Mist Dehydrator was acknowledged in the IRP (Docket No. LC 64) and is proposed for inclusion in rate base $23.7 million system wide ($22.2 million Oregon).

Staff's review of the engineering report provided by the Company in response to CUB DR No. 8 noted that the TEG fluid was not replaced during the 19-year interval from 1998, when the Large Dehydrator was placed into service, and 2017.[42] TEG fouling is a significant primary performance concern cited by the Company in its 2016 IRP application.[43]

Staff also notes that the Company's final choice was a like-for-like replacement of the same capacity (350 MM SCFD for large and 165 MM SCFD for small).[44] Absent the TEG fouling, the existing unit may have lasted longer, thereby delaying the financial impact for ratepayers.

The Company's response to Staff's follow-up DR No. 192 confirmed that the fluid was not replaced prior to 2017 and that the Company began replacing the

[42] Staff/204, NW Natural Response to CUB DR No. 08, Attachment 1.pdf, page 14.
[43] See *In the Matter of NORTHWEST NATURAL GAS COMPANY, dba NW NATURAL*, 2016 Integrated Resource Plan, Docket No. LC 64, INITIAL (APPLICATION, COMPLAINT, PETITION) filed Aug 26, 2016, page 3.27.
[44] Staff/204, NW Natural Response to CUB DR No. 08, Attachment 3.pdf.

system filters more frequently beginning in 2011, when TEG degradation was first observed. Although the TEG manufacturer did not provide a set lifetime, the engineering report noted that it is not uncommon in the industry for glycol to be replaced every 5-10 years.[45] Staff notes this would imply glycol replacement one to three times in 17 years.

The Company indicates that the cost to replace the fluid in 2017 was $59 thousand dollars including labor, equipment, and disposal of the old TEG. Staff notes that the cost of fluid is 0.2 percent of the cost to replace the system.

The Company's also provided a logbook with details regarding maintenance performed from 1999 through 2016 including filter changes.[46]

Q. Is Staff proposing a rate base adjustment for this project?

A. Not at this time.

[45] Staff/204, NW Natural Response to CUB DR No. 08, Attachment 1.pdf, page 14.
[46] Staff/204, NW Natural Response to Staff DR No 192, Attachment 1.pdf.

ISSUE 5. INCOME TAXES

Q. Is Staff proposing any income tax adjustments?

A. Yes, staff proposes to include the Oregon Corporate Activity Tax (CAT) in base rates and also proposes that the EDIT Rate Base True-Up from UG 344 (Exhibit 1013) should be increased.

Q. What is the CAT and how is it reflected in the Company's filing in this case?

A. The CAT was enacted by the 2019 Legislative Assembly and imposes a tax of $250 plus 0.57 percent of taxable commercial activity in excess of $1 million each year.

NW Natural estimates the amount of the CAT for 2020 will be $2.5 million.[47]

The CAT is not included in the Company's rate case filing. There is no mention of the CAT in the customary testimony regarding taxes in the revenue requirement [48] and the fact the CAT is not included was confirmed verbally by the Company in a workshop discussion that occurred on March 3, 2020.

Q. Has the Commission acted upon any other dockets regarding the CAT?

A. Yes. Five of the six investor owned utilities in Oregon have filed deferral applications for the CAT.[49]

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[47] See *In the Matter of NORTHWEST NATURAL GAS COMPANY, dba NW NATURAL, Application for Authorization to Deer Certain Expenses or Revenues Related to Corporate Activity Tax (CAT*), filed Dec 23, 2019, at 6.
[48] NW Natural/1000, Walker/16-20.
[49] PacifiCorp UM 2036, PGE UM 2037, Avista Utilities UM 2042, NW Natural UM 2044, and Cascade Natural Gas UM 2052.

PacifiCorp and PGE applications have been approved by the Commission[50] inclusive of a general agreement among the parties that the CAT will be eventually rolled into base rates.

PacifiCorp has subsequently filed a request for a general rate revision (UE 374) which, like NW Natural's request in this case, does not include the CAT. Staff notes that PacifiCorp and PGE also filed contemporaneous applications[51] for a tariff and automatic adjustment clause which necessitated prompt consideration of their respective deferral applications.

Q. What does Staff recommend regarding the CAT in this case?

A. Staff has a strong preference for inclusion of the CAT in base rates as soon as possible and interveners have indicated that point of view also. Staff recognizes that many uncertainties remain regarding the CAT. However, ongoing discussion in this case ought to center around whether the CAT is reasonably estimable in the revenue requirement rather than simply agreeing to an ongoing deferral mechanism.

NW Natural is required to pay the CAT quarterly on an estimated basis even though the rules surrounding the tax remain unsettled and the Oregon Department of Revenue continues to issue regulations specifying the particulars of how the tax is to be calculated.

[50] Order Nos. 20-028 and 20-029.
[51] PacifiCorp UE 367 and PGE UE 368.

Staff recommends including the $2.5 million CAT estimate in the revenue requirement perhaps subject to a one-time true up in the November 1, 2021 PGA.

Q. Please discuss the EDIT Rate Base True-Up from UG 344.

A. Order No. 19-105 (UG 344 phase 2) increased rate base by $15.379 million average, resulting in a stipulated revenue requirement increase of $1.433 million to account of the effects of amortizing excess deferred income taxes (EDIT). The rate base increase was an average of the expected cumulative change in accumulated deferred income taxes component of rate base over 5 years.

The theory underlying the Company's proposed credit is based on the cumulative nature of the 5-year average. In other words, rate base would increase each year as annual amortization occurred. The 5-year average collects more in the early years and less in the later years than otherwise would occur using the annual method. Accordingly, the settlement agreement between the parties included a provision requiring a true-up in the event a rate case is filed in less than 5 years.[52]

Q. How is the Company's proposed credit calculated?

A. The Company proposes refunding $1.0 million dollars to ratepayers as a temporary adjustment in the 2020-2021 PGA year.[53]

[52] See *In the Matter of NORTHWEST NATURAL GAS COMPANY, dba NW NATURAL, Request for a General Rate Revision,* Third Stipulation, filed Feb 4, 2019, at 4.
[53] See NW Natural/1000, Walker/26 and NW Natural/1013, Walker/1.

Staff's analysis of the Company's Exhibit 1013 indicates that the proposed refund is based on calculating the average cumulative change in rate base that would have occurred over the first 19 months of the five year period multiplied by a pro-rata revenue requirement based on the stipulated settlement figures underlying Order No. 19-105.

However, application of the method requires adjusting the stipulated 12-month increase in revenue requirement to a 19-month figure (April 1, 2019 to October 31, 2020). The Company's calculations appear to include this adjustment twice, which reduces the amount due to ratepayers by $223 thousand dollars.

Staff does not object to refunding the amount due through the 2020-21 PGA at this time.

Q. What is Staff's recommendation?

A. Staff recommends increasing the proposed true up credit from $1.039 million dollars to $1.261 million.

Q. Does this conclude your testimony?

A. Yes.

CASE: UG 388
WITNESS: JOHN L. FOX

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 201

Witness Qualifications Statement

April 17, 2020

WITNESS QUALIFICATIONS STATEMENT

NAME: John L. Fox

EMPLOYER: Public Utility Commission of Oregon

TITLE: Senior Financial Analyst
Energy Rates, Finance and Audit Division

ADDRESS: 201 High Street SE. Suite 100
Salem, OR. 97301

EDUCATION: I hold a Bachelor of Science degree in Business Administration / Accounting from the University of Oregon (1989). I also completed the Certificate in Public Management program at Willamette University (2010).

I have been licensed as a Certified Public Accountant in Oregon since 1991. Maintaining active status has required a minimum of 80 hours continuing professional education every two years.

EXPERIENCE: From 1989 to 1999 I was in general practice with several CPA firms in Southern Oregon and the Mid-Willamette Valley. My tax experience includes individuals, trusts and estates, qualified retirement plans, and extensive corporate, partnership, and LLC work. Accounting experience during this time includes client write up, compilation and review, and significant audit and attest work.

I have been employed in the executive branch of Oregon state government since 1999. My experience prior to joining the Commission staff includes 3 years as a cost accountant, 11 years as a senior budget analyst, and 4 years in an oversight role as a budget team lead.

I have extensive experience in capital construction and financing, complex cost modeling, rate development, fiscal projections, expenditure analysis, and cost control for programs with biennial revenues between $100 million and $300 million.

CASE: UG 388
WITNESS: JOHN L. FOX

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 202

Exhibits in Support
Of Opening Testimony

April 17, 2020

108 Accumulated provision for depreciation of gas utility plant.
A. This account shall be credited with the following:

(1) Amounts charged to account 403, Depreciation Expense, or to clearing accounts for current depreciation expense for gas plant in service.

(2) Amounts charged to account 403.1, Depreciation expense for asset retirement costs, for current depreciation expense related to asset retirement costs in gas plant in service in a separate subaccount.

(3) Amounts charged to account 421, Miscellaneous Nonoperating Income, for depreciation expense on property included in account 105, Gas Plant Held for Future Use, or 105.1, Production Properties Held for Future Use. Include also, the balance of accumulated provision for depreciation on property when transferred to account 105 or 105.1, from other property accounts. Normally, account 108 will not be used for current depreciation provisions because, as provided herein, the service life during which depreciation is computed commences with the date property is includible in gas plant in service; however, if special circumstances indicate the propriety of current accruals for depreciation, such charges shall be made to account 421, Miscellaneous Nonoperating Income.

(4) Amounts charged to account 413, Expenses of Gas Plant Leased to Others, for gas plant included in account 104, Gas Plant Leased to Others.

(5) Amounts charged to account 416, Costs and Expenses of Merchandising, Jobbing and Contract Work, or to clearing accounts for current depreciation expense.

(6) Amounts of depreciation applicable to gas properties acquired as operating units or systems. (See gas plant instruction 5.)

(7) Amounts charged to account 182.1, Extraordinary Property Losses, when authorized by the Commission.

(8) Amounts of depreciation applicable to gas plant donated to the utility.

(The utility shall maintain separate subaccounts for depreciation applicable to gas plant in service, gas plant leased to others and gas plant held for future use.)
B. At the time of retirement of depreciable gas utility plant, this account shall be charged with the book cost of the property retired and the cost of

removal and shall be credited with the salvage value and any other amounts recovered, such as insurance. When retirements, cost of removal and salvage are entered originally in retirement work orders, the net total of such work orders may be included in a separate subaccount hereunder. Upon completion of the work order, the proper distribution to subdivision of this account shall be made as provided in the following paragraph.

C. For general ledger and balance sheet purposes, this account shall be regarded and treated as a single composite provision for depreciation. For purposes of analysis, however, each utility shall maintain subsidiary records in which this account is segregating according to the following functional classification for gas plant:

(1) Production - manufactured gas, (2) production and gathering - natural gas, (3) products extraction - natural gas, (4) underground gas storage, (5) other storage, (6) base load LNG terminaling and processing plant, (7) transmission, (8) distribution, and (9) general. These subsidiary records shall reflect the current credits and debits to this account in sufficient detail to show separately for each such functional classification (a) the amount of provision for depreciation, (b) the book cost of property retired, (c) cost of removal, (d) salvage, and (e) other items, including recoveries from insurance. Separate subsidiary records shall be maintained for the amount of accrued cost of removal other than legal obligations for the retirement of plant recorded in account 108, Accumulated provision for depreciation of gas utility plant.

D. When transfers of plant are made from one gas plant account to another, or from or to another utility department, or from or to nonutility property accounts, the accounting for the related accumulated provision for depreciation shall be as provided in gas plant instruction 12.

E. The utility is restricted in its use of the provision for depreciation to the purposes set forth above. It shall not transfer any portion of this account to retained earnings or make any other use thereof without authorization by the Commission.

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CASE: UG 388
WITNESS: JOHN L. FOX

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 203

Exhibits in Support
Of Opening Testimony

April 17, 2020

NW Natural
UG 388 OPUC DR 354 Attachment 1
$(000's)

	RWIP	FERC A/C classified Accumulated Depreciation	Total Accumulated Depreciation	
UG 152	N/A			
UG 221	$ 9,213	$ (1,000,075)	$ (990,862)	1/
UG 344	$ 26,061	$ (1,270,970)	$ (1,244,909)	2/

1/ Included in 376.11 Mains account of Reserve
2/ Included in overall distribution plant category of reserve

CASE: UG 388
WITNESS: JOHN L. FOX

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 204

Exhibits in Support
Of Opening Testimony

April 17, 2020

NW Natural®

Rates & Regulatory Affairs
UG 388
2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 129

129. Please indicate if additional capital asset allocation audits have occurred subsequent to the 2016 report dated 1/26/2017.
a. If so, please provide a copy of the reports.

Response:

No additional capital asset allocation audits have occurred subsequent to the 2016 report dated 1/26/2017.

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Request No.: UG 388 OPUC DR 130

130. Please provide a copy of the 2017 Construction Overhead (COH) Study that was scheduled to occur after the year end 2017 close.
a. If any subsequent studies have occurred please provide those also.

Response:

The study referenced in the data request refers to a five-year historical report of construction overhead. NW Natural did not run this report in 2017. Please see "Confidential UG 388 OPUC DR 130 Attachment 1," which is a five-year historical report of construction overhead for 2015 through 2019. The attachment is marked Confidential because it includes actual data for the 4th quarter of 2019 that has not yet been released to the public.

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Request No.: UG 388 OPUC DR 131

131. Please provide the 2019 Capital Budget and 2020, 2021, and 2022 Capital Forecasts in the same format as the UG 344 rate case. (DR 197 CONF Attachment 7 - 2018 Capital Budget.xlsx and DR 197 CONF Attachment 8 - 2019 Capital Forecast.xlsx, respectively).

Response:

Please see Confidential UG 388 OPUC DR 131 Attachment 1 for the 2019 Capital Budget and Confidential UG 388 OPUC DR 131 Attachment 2 for the 2020-2022 Capital Forecast, which are in the same format as provided in the UG 344 rate case.

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Request No.: UG 388 OPUC DR 132

132. Please provide a list in excel format of all projects included in construction work in process at December 31, 2018 and September 30, 2019. Please include a list of all accounting work orders by project and FERC account. Please identify the date when each project or project component is expected to be placed into service.

Response:

Please see UG 388 OPUC DR 132 Attachments 1 and 2. Because the translation from each CWIP project to FERC account(s) involves a manual process, FERC account(s) are indicated for those projects exceeding $250,000.

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Request No.: UG 388 OPUC DR 133

133. Please provide a list in excel format of all discrete capital investments over $150 thousand dollars placed into service each month from January through September 2019 for each FERC account:
a. For the following categories, please include Oregon and Washington:
i. Intangible software
ii. General
iii. Storage and Storage Transmission
iv. CNG/LNG
b. For the following categories, please include Oregon only:
i. Transmission
ii. Distribution
c. For each investment, please include the project name or description with enough specificity for Staff to understand what was purchased.
d. For each investment, please include in the response all coding necessary for further inquiry. Including but not limited to asset numbers, accounting work orders (AWO), project numbers, etc.
e. For specific investments discussed in the Company's direct testimony and exhibits please indicate the exhibit and page number.
f. For each investment, please indicate under which category it is included in the capital expenditure bar chart (Figure 1) presented in testimony (Davilla 900/27).
g. Please identify investments included in the $32.7 million 250 Taylor capital costs. (Pipes, 500/42)

Response:

See UG 388 OPUC DR 133 Attachment 1 for items a – f. For item g, no assets related to 250 Taylor were put into service between January 2019 and September 2019.

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Rates & Regulatory Affairs
UG 388
2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 134

134. Please provide a list in excel format of all discrete capital investments over $150 thousand dollars projected to be placed into service each month from October 2019 through October 2021 for each FERC account:
a. For the following categories, please include Oregon and Washington:
  i. Intangible software
  ii. General
  iii. Storage and Storage Transmission
  iv. CNG/LNG
b. For the following categories, please include Oregon only:
  i. Transmission
  ii. Distribution
c. For each investment, please include the project name or description with enough specificity for Staff to understand what is being purchased.
d. For each investment, please include in the response all coding necessary for further inquiry. Including but not limited to asset numbers, accounting work orders (AWO), project numbers, etc.
e. For specific investments discussed in the Company's direct testimony and exhibits please indicate the exhibit and page number.
f. For each investment, please indicate under which category it is included in the capital expenditure bar chart (Figure 1) presented in testimony (Davilla 900/27).
g. Please identify investments included in the 2020 Capital Safety Investment Plan (UM 1900: NW Natural's Annual Oregon Safety Project Plan in Compliance with OPUC Order No. 17-084, pages 8-10, filed September 30, 2019).
h. Please identify investments included in the $32.7 million 250 Taylor capital costs. (Pipes, 500/42)

Response:

See UG 388 OPUC DR 134 Attachment 1 for response. The $32.7M 250 Taylor capital costs reference in Pipes 500/42 did not include Construction Overhead. All numbers included in the attached response include Construction Overhead, including those identified at 250 Taylor capital costs (HQ – The Move Project).

Capital projects may be split to multiple FERC accounts depending on the type of assets involved in the project. In addition, a capital project may have trailing charges that occur after the date placed in-service, in which case there may be multiple months of amounts being placed in-service for a particular project.

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Request No.: UG 388 OPUC DR 135

135. Please provide in excel format the dollar amount of non-discrete capital investments by projected to be placed into service each month from October 2019 through October 2021 for each FERC account:
a. For the following categories, please include Oregon and Washington:
  i. Intangible software
  ii. General
  iii. Storage and Storage Transmission
  iv. CNG/LNG
b. For the following categories, please include Oregon only:
  i. Transmission
  ii. Distribution
c. For each investment, please indicate under which category it is included in the capital expenditure bar chart (Figure 1) presented in testimony (Davilla 900/27).
d. For each investment, please indicate under which category it would be included in the categories presented in testimony (Davilla 900/28-31). Staff notes the discussion of methodology does not match 1:1 with the chart on page 900/27.

Response:

See UG 388 OPUC DR 135 Attachment 1 for response.

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Request No.: UG 388 OPUC DR 136

136. Regarding Land and Structures,
a. Please provide a worksheet in excel format showing the individual asset details for land as of Sept 2019 in the same format as last rate case (UG 344 OPUC DR 122 Attachment 1 Land Alloc - Dec 2016.xlsx)
b. Please provide a worksheet in excel format showing the individual asset details for structures as of Sept 2019 in the same format as last rate case (UG 344 OPUC DR 122 Attachment 2 Structures Alloc - Dec 2016.xlsx)
c. Please provide a list in excel format of projected land and building additions by month including October 2019 through October 2021 including the anticipated allocation factor for each. Please provide asset level detail similar to a. and b. above.
d. Please identify investments included in the $32.7 million 250 Taylor capital costs. (Pipes, 500/42)

Response:

a. Please see "UG 388 OPUC DR 136 Attachment 1" for land allocation.

b. See "UG 388 OPUC DR 136 Attachment 2" for structures allocation.

c. See "UG 388 OPUC DR 136 Attachment 3" for detail around land and structures, FERC accounts 389 and 390. Large projects are identified by FERC account. Projects titled "Blanket Project Applicant" represent small projects that have been aggregated to FERC 389 or 390 for each forecasted month.

d. Within "UG 388 OPUC DR 136 Attachment 3" the two line items for the project "201827 HQ – The Move Project" represent the structures (FERC 390) included in the 250 Taylor capital costs. The two amounts total $9,125,813 and include the base cost plus an application of overhead. The $32.7 million stated in part "d" does not include the application of overhead. No land (FERC 389) is associated with the 250 Taylor capital costs.

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Request No.: UG 388 OPUC DR 137

137. Regarding the major distribution system and facility storage projects presented in testimony (Karney, 400/3-4):
a. For each project, please provide the project budget details (e.g. materials, labor, contract services, engineering, AFUDC, construction overhead, etc.) as of the date of the Company's final comments in Docket No. LC 71 filed on February 8th 2019.
b. Please provide the details of all subsequent changes to the project budgets that occurred from February 8th, 2019 through the Company's initial filing in this rate case.
c. Please provide a detailed narrative explanation of the decision to re-route the Sandy feeder project and split the project into two separate projects for the rate case filing.
d. Please provide a detailed narrative explanation of how the Company interacts with the Oregon Department of Transportation (ODOT) for the Sandy feeder project specifically, including a discussion of how ODOT's design and project management decisions affected the Company's decision to reroute the project.
e. Please provide the pipeline size and installed length in feet that was contemplated at the time of the Company's final comments in the LC 71 docket compared to the pipeline size and installed length in feet as included in this rate case for the following projects.
i. Sandy Feeder Reinforcement/OR 212 257th to US 26 Project
ii. Hood River Reinforcement
iii. South Oregon City Reinforcement
f. Regarding the Mist Large Dehydration Project,
i. Please provide the project budget details (e.g. materials, labor, contract services, engineering, AFUDC, construction overhead, etc.) as of the date of the Company's update of its 2016 IRP Action Plan. (Karney, 400/36)
ii. Please provide the details of all changes to the project budget that occurred subsequent to February 2018.
iii. Please provide a copy of the FMEA analysis referenced in testimony (Karney, 400/38).
iv. Please provide a detailed narrative explanation of why "replacement of the dehydrator is still the least-cost, least-risk option". (Karney, 400/40).
g. Regarding the Mist Instrument and Controls Project (Phase 2),
i. Please provide a detailed narrative explanation why completion of the project was delayed from October 2018 to October 2020 subsequent to its removal from rate base in the UG 344 rate case. (Karney, 400/41)

ii. Please explain why the project cost escalated from $1.238 million to $1.7 million. (Karney, 400/41).

Response:

To manage large capital projects, NW Natural uses a Project Management process with multiple stage gates. A high-level summary of the process is as follows:

- Initiation: At this stage, the project team is authorized to take action to move the project forward. A nominal amount of money may be authorized for items such as internal labor, feasibility studies, or other items necessary to scope the project.
- Planning: At this stage, the project team will focus on defining final design, budget, and schedule. The intent is to ensure that the project has a fully defined plan and approach for moving to execution. The Planning phase will have a budget to account for items such as engineering design, exploratory field work, and permits.
- Execution: At this stage, the project is constructed to completion. Any changes to scope and costs are captured in Change Orders. The Execution phase will have a budget to account for all costs necessary for constructing the project. (Note: The Execution budget does not include the already approved Planning budget).
- Close out: At this stage, the project team will complete all required paperwork associated with the project.

During the IRP process, there is not a budget created yet with COH, AFUDC, etc., because we do not create a "project" in our Project Management process until the IRP is acknowledged (or not) by the Commission. For these system reinforcements and betterments, we use proposed pipeline size, length and route to create cost estimates based on projected internal labor and material costs and/or external labor from similar projects for the IRP analysis. For projects at Newport, Portland LNG, and Mist, we may commission a study to provide a cost estimate. If the system reinforcement or betterment is acknowledged by the Commission in the IRP process, then we kick-off the Initiation phase, where we create a Planning budget. The Initiation phase is followed by the Planning phase, where we create the Execution budget. Below is a summary table of all the major distribution system and facility projects presented in testimony and their project management status.

Project	Project Management Status as of February 8, 2019	Project Management Status as of December 30, 2019	Expected move to Execution month	Expected Used and Useful month

Sandy Feeder Reinforcement	Not started - Waiting for IRP acknowledgement	Planning	May 2020	October 2020
Hood River Reinforcement	Not started - Waiting for IRP acknowledgement	Planning	April 2020	June 2020
South Oregon City Reinforcement	Not started - Waiting for IRP acknowledgement	Planning	February 2020	May 2020
Happy Valley Reinforcement	Not started - Waiting for IRP acknowledgement	Execution	N/A	March 2020
Kuebler Boulevard Reinforcement	Not started - Waiting for IRP acknowledgement	Initiation	May 2021	October 2021
Mist Large Dehydrator	Execution	Execution	N/A	October 2020
Mist Instrument and Controls Phase 2	Not started	Planning	April 2020	October 2020
OR 212 257th to US 26 ODOT	Planning	Execution	N/A	March 2020

a. As mentioned above, not all of the major distribution system and facility projects presented in testimony had full project budget details as of February 8, 2019.

IRP projects as of February 8, 2019

Projects in NW Natural's 2018 IRP (LC 71) action plan (Hood River Reinforcement, Happy Valley Reinforcement, Sandy Feeder Reinforcement, South Oregon City Reinforcement and Kuebler Blvd Reinforcement) had not been acknowledged by the OPUC as of February 8, 2019 (the OPUC issued Order No. 19-073 on March 4, 2019). As such, the projects had not yet entered the Initiation or Planning phase.

Mist Instrument and Controls Project (Phase 2) as of February 8, 2019

The Mist Instrument and Controls Project (Phase 2) had not yet entered the Planning phase as of February 8, 2019.

Mist Large Dehydration System Project as of February 8, 2019

The Mist Large Dehydration System Project had a detailed Execution budget as of February 8, 2019, as shown below:

Project #:	201663	Project Name:	Mist Large Dehydration System Replacement
Project Mgr:	Shane Melski		

Show/Hide WBS	WBS Description	November, 2018
	Total Requested Amount	$ 20,132,577
-01	Design	$ 3,189,243
-02	Construction	$ 16,943,334
CE Group	Labor	$499,000
CE Group	Equipment	$5,784,500
CE Group	Subcontract	$10,165,804
CE Group	Materials	$ -
CE Group	Other	$494,030
-02-99	Execution Contingency	$0

Feb. 8, 2019 Execution Budget = $20,132,577 (without construction overhead, or "COH") (Oregon calculated allocation $18,864,225)

Execution Budget COH = $201,325 (Oregon calculated allocation $188,642)

Feb. 8, 2019 Total Budget = $ 20,333,902 (Oregon calculated allocation $19,052,866)

OR 212 257th to US 26 ODOT Project as of February 8, 2019

The OR 212 257th to US 26 ODOT Project had a detailed Planning budget as of February 8, 2019, as shown below:

Project #:	201797	Project Name:	OR212 257th Ave to US26
Project Mgr:	Andrea Kuehnel		

Show/Hide WBS	WBS Description		YEAR 1	YEAR 2	YEAR 3
	Total Requested Amount	$ 1,095,131			
-01	Design	$ 1,095,131			
CE Group	Labor	$ 40,000	$35,000	$5,000	$0
CE Group	Equipment	$ 4,500	$4,000	$500	$0
CE Group	Subcontract	$ 998,631	$998,631	$0	$0
CE Group	Materials	$ 2,000	$2,000	$0	$0
CE Group	Other	$ 50,000	$50,000	$0	$0
-02	Construction	$ -			
CE Group	Labor	$ -	$0	$0	$0
CE Group	Equipment	$ -	$0	$0	$0
CE Group	Subcontract	$ -	$0	$0	$0
CE Group	Materials	$ -	$0	$0	$0
CE Group	Other	$ -	$0	$0	$0
-02-99	Execution Contingency	$0			

Feb. 8, 2019 Planning Budget = $1,095,131 (without COH)

Planning Budget COH = $416,150

b. Updates to each of the major distribution system and facility projects from February 8, 2019 to the rate case (UG 388) filing date of December 30, 2019 are provided below.

Sandy Feeder Reinforcement Project

Between February 8 and December 30, 2019, a project Planning budget was developed for the Sandy Feeder Reinforcement Project. Please refer to **UG 388 DR 137 Attachment 1** for the project Planning budget without construction overhead.

December 30, 2019 Planning Budget = $950,000 without construction overhead.

December 30, 2019 Total Planning Budget = $1,311,000 with construction overhead.

The Execution phase budget is still in the process of being developed, as engineering design and easement acquisition are ongoing at this time. The current Total Project Estimate for the Sandy Feeder Reinforcement Project is $14.9 million as per NW Natural/400/Karney/Page 9.

Hood River Reinforcement Project

Between February 8 and December 30, 2019, a project Planning budget was developed for the Hood River Reinforcement Project. Please refer to **UG 388 DR 137 Attachment 2** for the project Planning budget without construction overhead.

December 30, 2019 Planning Budget = $400,000 without construction overhead.

December 30, 2019 Total Planning Budget = $552,000 with construction overhead.

The Execution phase budget is still in the process of being developed, as engineering design is ongoing at this time. The current Total Project Estimate for the Hood River Reinforcement Project is $4.6 million as per NW Natural/400/Karney/Page 17.

South Oregon City Reinforcement Project

Between February 8 and December 30, 2019, a project Planning budget was developed for the South Oregon City Reinforcement Project. Please refer to **UG 388 DR 137 Attachment 3** for the project Planning budget without construction overhead.

December 30, 2019 Planning Budget = $500,000 without construction overhead.

December 30, 2019 Total Planning Budget = $690,000 with construction overhead.

The Execution phase budget is still in the process of being developed, as engineering design is ongoing at this time. The current Total Project Estimate for the South Oregon City Reinforcement Project is $5.8 million as per NW Natural/400/Karney/Page 24.

Happy Valley Reinforcement Project

Between February 8 and December 30, 2019, budgets were developed for planning for internal labor, project planning, partial execution and the remainder of the execution for the Happy Valley Reinforcement Project.

Please refer to **UG 388 DR 137 Attachment 4** for the project Planning budget without construction overhead.

Please refer to **UG 388 DR 137 Attachment 5** for the partial Execution budget without construction overhead for early horizontal directional drill work near a school zone.

Please refer to **UG 388 DR 137 Attachment 6** for the remainder of the Execution budget without construction overhead.

December 30, 2019 Total Project Budget = $3,487,620 without construction overhead.

December 30, 2019 Total Project Budget = $4,812,916 with construction overhead.

Kuebler Boulevard Reinforcement Project

The current Total Project Estimate for the Kuebler Boulevard Reinforcement Project is $19.7 million as per NW Natural/400/Karney/Page 35. The Company is working on a Request For Proposal (RFP) for an engineering consultant to evaluate final route selection, produce the detailed design, and develop the final project budget. As of December 30, 2019, there have been no further changes to the project budget.

Mist Large Dehydration System Project

Between February 8 and December 30, 2019, there were no formal change orders on the Mist Large Dehydration System Project, as the project was still in the open book, design phase of the contract. In October 2019, NW Natural conducted 60% design review in a meeting with the EPC contractor. The EPC contractor indicated in that October 2019 meeting that EPC costs had increased.

The total project estimate for the Mist Large Dehydration System Project was set at $23.7 million (Oregon calculated allocation $22.2 million) based on quotes for long-lead equipment and internal estimates of increased labor and material costs, as per NW Natural/400/Karney/Page 39.

Please see the Company's response to UG 388 OPUC DR 137(f) for further details about the Mist Large Dehydration System Project.

Mist Instrument and Controls Project (Phase 2)

Between February 8 and December 30, 2019, a project Planning budget was developed for the Mist Instrument and Controls Project (Phase 2). Please refer to **UG 388 DR 137 Attachment 7** for the project Planning budget without construction overhead.

December 30, 2019 Planning Budget = $140,000 without construction overhead. (Oregon calculated allocation $132,160)

December 30, 2019 Total Planning Budget = $194,600 with construction overhead. (Oregon calculated allocation $183,702)

The Execution phase budget is still in the process of being developed, as engineering design is ongoing at this time. The current Total Project Estimate for the Mist Instrument and Controls Project (Phase 2) is $1.8 million (Oregon calculated allocation $1.7 million) as per NW Natural/400/Karney/Page 41.

OR 212 257th to US 26 ODOT Project

Between February 8 and December 30, 2019, project budgets were prepared for early purchase of materials and the remaining Execution budget. Please refer to **UG 388 DR 137 Attachment 8** for approval of early request to purchase pipeline materials. Please refer to **UG 388 DR 137 Attachment 9** for the full Execution budget and a summary of the estimated total project costs.

December 30, 2019 Total Project Budget = $12,083,499 without construction overhead.

December 30, 2019 Total Project Budget = $16,675,229 with construction overhead.

c. Please refer to **UG 388 DR 137 Attachment 10** for identification of the pipeline route alternatives, benefits, risks and concerns and estimated design, construction, and total project costs of pipeline construction, followed by a summary of the decision to select the preferred alternative to reroute the 8-inch pipeline away from OR 212 at Richey Road.

The Sandy Feeder Reinforcement Project is presented in Section 5.3 of LC 71, NW Natural's 2018 Integrated Resource Plan. Figure 8.13 of the 2018 IRP shows the Sandy Feeder split into two separate projects. Footnote 13 at the bottom of page 8.17 and Footnote 14 at the bottom of page 8.18 further discuss our intent to separate the Sandy Feeder into two separate projects. Footnote 13 states: "The portion of the Sandy Feeder that is not replaced under the reinforcement project is being replaced earlier. This is due to the Oregon Department of Transportation's requirement related to its road construction project. This public works replacement project is mandated." Footnote 14 states: "The Sandy Feeder Reinforcement project is identified as Phase 2 in Figure 8.13. Phase 1 in Figure 8.13 refers to the Sandy Feeder public works project, which involves a 2019 relocation mandated by road construction."

It was necessary to split the Sandy Feeder in two phases due to ODOT's public works roadway improvements project along OR 212 between I-205 and US 26. At the time of the 2018 submittal, NW Natural was obligated by ODOT to complete gas facility relocation work and construction of any new 8-inch pipeline within the OR 212 right-of-way by the end of calendar year 2019. NW Natural did not move forward with the Planning phase of the Phase 2 portion of the Sandy Feeder Reinforcement Project until the 2018 IRP was acknowledged by the OPUC in the spring of 2019. The Sandy Feeder Reinforcement Project was proposed for 2020 construction in the 2018 IRP because of the time it was believed necessary for completion of the surveying and engineering design, easement acquisition, permit acquisition, vendor procurement and construction.

d. <u>Chronology of OR 212 257th to US 26 ODOT Project and Sandy Feeder Reinforcement Project (Phase 1)</u>

Please see **UG 388 DR 137 Attachment 11** for a chronology of the key document transmittals received from ODOT and ODOT project deadlines as well as NW Natural's activities during the Initiation and Planning phases of the OR 212 gas pipeline improvements (Phase 1 of the Sandy Feeder Reinforcement Project).

<u>NW Natural Interaction with ODOT during the Sandy Feeder Project Planning</u>

ODOT hired a consulting engineering firm to issue correspondence and manage the utility notification program for ODOT's OR 212 roadway improvements project. ODOT's design and utility notification process is an iterative process. As ODOT advanced their roadway plans to the next stage of ODOT's plan development, its utility notification consultant would then transmit the newest plans along with a conflict letter to NW Natural. As NW Natural's gas facilities occupy ODOT's right-of-way, we are obligated to perform our relocation work to satisfy ODOT's project schedule and we have very little influence over ODOT's schedule.

At least four times between 2017 and 2019, ODOT's consultant issued notice of utility conflict letters and draft updated construction plans informing NW Natural of potential gas facility conflicts to investigate and the date for which NW Natural had to complete utility relocation work to avoid delay to ODOT's project. As the design matured for ODOT's three projects along the OR 212 corridor, the date required for NW Natural to complete relocation work was adjusted from early 2019 to August 2019 for work west of 257th and May 2020 for their OR 212 work zone from 257th Ave to Richey Road.

Multiple times between 2018 and 2019, utility relocation design meetings were conducted by ODOT's consultant, with NW Natural and ODOT staff present. At these utility relocation design meetings ODOT's project schedule was a point of discussion, as was the newest date for the required completion of our utility relocation work. These meetings were also an opportunity for NW Natural staff to ask questions to clarify the scope of ODOT's proposed road improvements to assist with development of our gas facility relocation plans.

In 2018, NW Natural staff informed ODOT of a planned future Sandy Feeder Reinforcement gas pipeline project along OR 212. ODOT and their consultant informed NW Natural staff that once ODOT completed the OR 212 improvements, NW Natural would not be able to cut the new roadway pavement (pavement no-cut moratorium) and suggested that NW Natural complete all pipeline construction before the start of the ODOT OR 212 improvements project. (ODOT later made a condition of our work in right-of-way permit that all 8-inch pipeline construction within OR 212 had to be completed by the end of 2019. Refer to the May 5, 2019 date in Attachment No. 1.)

How ODOT Design and Project Management Affected NW Natural's Decision to Reroute the Project

ODOT did not directly influence NW Natural's decision to reroute the 8-inch pipeline. In Part c of our response to UG 388 DR 137, we summarize the benefits and risks and concerns with the OR 212 route identified in the 2018 IRP versus the selected location to reroute the pipeline.

ODOT's policy of not allowing the new roadway pavement to be cut (pavement no-cut moratorium) after ODOT completed construction of the OR 212 roadway improvements was a factor we had to consider when estimating the time requirements for acquisition of easements from private landowners and environmental permitting procurement.

Before we received any notification about the OR 212 improvements from ODOT, ODOT had already developed its project schedule and started roadway design. ODOT's stated schedule to start work at the Deep Creek Bridge in June 2020 was another factor that we had to consider when identifying the risks and concerns for the OR 212 route shown in LC 71. To satisfy ODOT's May 2020 deadline for our work near Deep Creek, we decided that we needed to finish our gas pipeline construction before wet weather set in by late October, 2019. Easement acquisition and uncertainty about the potential environmental permitting requirements and permit acquisition timelines made construction by October, 2019 a schedule risk. As stated in Part c of our response to UG 388 DR 137, this schedule risk was one of the many risks and concerns behind our decision to reroute the pipeline.

e. Discussed below is the pipeline size and installed length in feet that was contemplated at the time of the Company's final comments in the LC 71 docket, as compared with the pipeline size and installed length in feet as included in this rate case for the following projects:

i. Sandy Feeder Reinforcement / OR 212 257th to US 26 ODOT Project

The OR 212 257th to US 26 ODOT Project was constructed in summer and fall of 2019 with the 8-inch wrapped steel pipeline placed into service in December 2019. The Sandy Feeder Reinforcement Project construction is planned to start in June 2020 and be completed in October, 2020. We are still working on acquisition of an easement for the district regulator at the terminus of the 8-inch gas main. If we are unable to procure an easement on the preferred property then it is possible that the length shown below for the Sandy Feeder could increase by up to 0.3 miles. The pipe diameter and lengths contemplated with the 2018 IRP file (LC 71) and the 2020 Rate Case are shown in the table below.

Project	**Contemplated with LC 71 Filing**		**2020 Rate Case DR 137 e.**	
	Pipe Diameter	Length	Pipe Diameter	Length
Sandy Feeder (2020)	8-inch	26,500 feet	8-inch	16,900
OR 212 257 to US 26 (2019)	8-inch	15,900 feet	8-inch	26,100 feet

ii. Hood River Reinforcement Project

Project	**Contemplated with LC 71 Filing**	**2020 Rate Case DR 137 e.**

	Pipe Diameter	Length	Pipe Diameter	Length
Hood River Reinforcement (2020)	4-inch	12,100 feet	4-inch	6200 feet

iii. South Oregon City Reinforcement Project

Project	**Contemplated with LC 71 Filing**		**2020 Rate Case DR 137 e.**	
	Pipe Diameter	Length	Pipe Diameter	Length
South Oregon City Reinforcement (2020)	6-inch	8,000 feet	6-inch	8,500

f. Regarding the Mist Large Dehydration System Project

i. In its 2016 IRP (LC 64 filed August 26, 2016), NW Natural included the Mist Large Dehydration Project in its action plan concluding that it should "[r]eplace or repair, depending on relative cost-effectiveness, the large dehydrator at Mist's Miller Station." To prepare for the evaluation, a project charter was created on November 9, 2016 (**UG 388 OPUC DR 137 Attachment 12**). Page 7 of the project charter shows the detailed Planning budget of $606,000 (without construction overhead) (Oregon calculated allocation $567,822). Total Planning budget with COH was $757,500 (Oregon calculated allocation $709,778).

On March 21, 2017, NW Natural prepared its Alternative Analysis for the Mist Large Dehydration System Project (**UG 388 OPUC DR 137 Attachment 13**). In accordance with the acknowledgment in the IRP, the Alternative Analysis recommended to "conduct an engineer evaluation and repair/replace (the) large dehydration system." The Alternative Analysis included a total estimated capital cost of $7,114,000 (Oregon calculated allocation $6,665,818). The Alternative Analysis included three additional alternatives, which included doing nothing to the large dehydrator until failure, replacing the large dehydrator without evaluation, and replacing the lost Mist capacity with additional Northwest pipeline capacity.

The Company completed the engineering report during the 2017 injection season and included examination of service and maintenance records, operability, external structural integrity, age, and cost estimations. The engineering report recommended both interim repairs and replacement of the large dehydration system. The Company attempted interim repairs to

the large dehydration system, but those repairs were not successful. As a result, the Company issued an RFP to prospective contractors for the design and construction of the Mist Large Dehydration System Project. The RFP responses contained pricing substantially higher than the initial estimated cost range.

On July 19, 2018, NW Natural addended the alternative analysis with the updated costs (**UG 388 OPUC DR 137 Attachment 14**). The updated alternative analysis included a total project cost of $21.3 million (Oregon calculated allocation $19,958,100). This alternative analysis concluded that the "[r]eplacement of the large dehydration system at Mist with a like-for-like 350 MMSCFD system featuring two contact towers (a.k.a. Case 2) is the recommended option." On July 25, 2018, the project team submitted its move to execution paperwork (**UG 388 OPUC DR 137 Attachment 15**), which included an execution budget of $20,333,902 (Oregon calculated allocation $19,052,866). A contract was awarded to Burns and McDonnell to design and construct the large dehydration system. As mentioned in part (b) of this data request, the total project estimate for the Mist Large Dehydration System Project was set at $23.7 million (Oregon calculated allocation $22.2 million) based on quotes for long-lead equipment and internal estimates of increased labor and material costs, as per NW Natural/400/Karney/Page 39.

The Burns and McDonnell contract was an open book/closed book contract. During the e-sign phase, the contract would remain open book, and the ultimate contract price would be set once the design was finalized. The Company and Burns and McDonnell are currently reviewing the final design and associated costs. A change order will be created to capture any additional costs above what has been approved in the move to execution document. This data request will be supplemented once that change order has been approved.

ii. Please see Response to UG 388 OPUC DR 137(f)(i) above for project budget changes during the life of the project.

iii. Please see the response to UG 388 CUB DR 8 for a copy of the FMEA analysis referenced in testimony. UG 388 CUB DR 8 Attachment 2 is the FMEA worksheet in excel and contains the full FMEA analysis performed. UG 388 CUB DR 8 Attachment 3 is the associated write up and contains the conclusions of the FMEA study.

iv. The replacement of the Mist large dehydration system is still the least-cost, least risk option, as documented in the FMEA study (see UG 388 CUB DR 8 Attachments 2 and 3). The FMEA study concluded that replacement of the Mist large dehydration system was necessary as soon as possible for both safety and compliance. It found that the large dehydration system has performance and operational issues and has a high probability of experiencing a failure impacting safety and/or compliance by 2024. Without an operational dehydration unit, the Company would have to purchase additional capacity from interstate pipelines to meet peak demand. That capacity was estimated in the Alternatives Analysis for the project to cost $58 million annually. **See UG 388 OPUC DR 137 Attachment 13 and 14**. Consequently, the Company concluded that the replacement of the large dehydration system at Mist's Miller Station was appropriate as soon as possible.

> To reach this conclusion, NW Natural evaluated the continued operations of the existing systems with repair and maintenance on a piece-by-piece as-needed basis (Case 1) and a like-for-like replacement of the dehydration systems (Case 2). It is important to note that the Mist storage field cannot operate without a functioning dehydrator. The gas stored underground becomes saturated with water and the dehydrator removes the excess water from the gas.
>
> Case 1 required a substantial O&M budget for planned maintenance over 20 years with major outages / teardowns required once per 4-year cycle. The replacement schedule of predicted systems is based upon structural analysis of component external structures only. The existing dehydrator was found to have:
> • Existing failed systems.
> • Several critical systems predicted to have structural failure within the next 12 years (must replace).
> • Fouled / black, highly viscous TEG observed on and within all systems (should be clear as water).
> • Internal components of the heat exchanger equipment could not be examined.
> • Portions of large dehydrator regen firetube that could be observed due to removal of stilling column for repair exhibited heavy depositing of viscous substance (congealed fouled / black TEG).
> • Only the external structures of the vessels could be evaluated for prediction of remaining life.
>
> As a result of the FMEA study, the regen and scrubber systems for Case 1 from the 2024 – 2025 season show four (4) possible modes of failure related to safety and/or compliance with a high probability of occurring.

The severity of the failure modes and their associated probability of occurrence make it clear that there is high risk of catastrophic failure by 2024 if Case 1 were pursued. This data supports replacement of the entire large dehydration system before 2024.

Case 2 included new regens, cooling towers, train systems, and all associated systems. New systems are modernized and require minimal O&M budget for planned maintenance over 20 years.

As a result of the FMEA study, due to the high probability of failure (safety, compliance, & otherwise) and large number of downtime days due to failure by 2024 – 2025, the large dehydration system should be replaced as per Case 2 as soon as possible.

g. Regarding the Mist Instrument and Controls Project (Phase 2)

i. The Mist Instrument & Controls Project's scheduled completion had shifted from 2018 to 2019, and again from 2019 to 2020, due to resource constraints caused by key engineering staff and operations staff at Miller Station being unavailable to support the project given other critical priorities. The project was initiated at the end of July 2019 and ultimately the 'Move to Planning' was approved on 9/16/2019 with completion in 2020.

ii. The initial scope and cost estimate of $1.238 million was based on a 2016 engineering report conducted by EN Engineering that outlined several system components that needed to be replaced or upgraded, specifically the replacement of moisture analyzers and Rosemount transmitters. Since then, NW Natural electricians have noted additional failed ultrasonic transmitters. Those transmitters are at the end of their 20-year lifespan and are required to ensure proper metering in and out of wells. Additionally, the site Emergency Shut Down (ESD) flow switches are incorrectly designed for the facility and put the plant at risk of a false shutdown. Collectively, these are additional scope items that were not included in the original scope that resulted in additional cost and the new project estimate of $1.7 million.

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Request No.: UG 388 OPUC DR 138

138. Regarding the Safety Related Projects discussed in testimony (Karney, 400/43-50),
a. Please identify all costs included in the Company's rate base request in this case.
b. Please identify all non-rate base costs included in this case by FERC account.
c. Please cross reference the response to a. and b. above to the capital and O&M expenditures presented in the 2019 Safety Plan (UM 1900: NW Natural's Annual Oregon Safety Project Plan in Compliance with OPUC Order No. 17-084, pages 8-14, filed September 30, 2019).

Response:

a. NW Natural/400/Karney/Page 42/Lines 18-20 states: "The Company's safety-related projects address, among other topics, seismic risk, the most recent significant PHMSA pipeline safety regulation being published, and the installation of EFVs." The associated costs of these projects included in rate base are:

   i. Seismic Assessment - $566,000.

   ii. Underground Storage Assessments costs for 2020 and 2021 are included in UG 388 OPUC DR 134 Attachment 1 (rows 100-105, labeled as Mist Well Rework 2020 and Mist Well Rework 2021).

   iii. EFV retrofit pilot program - $690,000 as part of the Company's DIMP program.

   The remaining projects presented in NW Natural's 2019 Safety Project Plan and associated costs included in rate base are:

   iv. Eugene Transmission ILI - $3.498 million

   v. Springfield Transmission ILI - $1.676 million

   vi. South Eugene Transmission ILI - $1.981 million

vii. Pipeline Replacement due to Natural Forces – $1.960 million

viii. Vintage Plastic – $2.157 million

ix. Meter Protection Installation – $1.6 million

x. Pipeline Modifications due to ROW Encroachment – $0.495 million

xi. ASV/RCV installations – $1.252 million

b. For the Test Year, the following Oregon Allocated non-rate base costs, by FERC account, are included in this case:

FERC	OR Allocated TY O&M Pipeline Integrity
856	$1,191,348
863	$344,970
874	$679
885	$2,576,741
887	$2,595
892	$5,422
921	$2,579
Total	$4,124,335

c. NW Natural's 2019 Safety Project Plan (SPP) represents projected 2020 spend. Additionally, the costs presented in the SPP are preliminary estimates and do not include construction overhead.

The costs stated in the SPP for capital projects are as follows.

i. Seismic Assessment – $500,000

ii. Underground Storage Assessment – $3.0 million

iii. EFV retrofit pilot program - $500,000

iv. Eugene Transmission ILI - $2.5 million

v. Springfield Transmission ILI - $1.2 million

vi. South Eugene Transmission ILI - $1.4 million

vii. Pipeline Replacement due to Natural Forces, Vintage Plastic, Meter Protection Installation, Pipeline Modifications due to ROW Encroachment, and ASV/RCV Installation (combined in SPP filling) – $2.2 million

The costs stated in the SPP for calendar year 2020 O&M expenditures are as follows:

i. Sewer Crossbore inspection - $600,000

ii. HCA/Moderate Consequence Area (MCA) Analysis - $100,000
iii. Transmission Inline Reassessment and Remediation - $1.1 million
iv. Natural Forces - $272,000
v. Damage Prevention - $525,000
vi. Public Awareness - $900,000
vii. Right of Way Encroachments - $175,000

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Request No.: UG 388 OPUC DR 139

[Start Confidential]

[redacted] [End Confidential]

Response:

All forward looking monthly data that has not been disclosed to the public has been deemed confidential. Worksheets that contain forward looking monthly data are listed below:

- Rate Base Net Plant
- Rate Case Dep Exp
- Land & Structures
- Gross Plant
- Transfers – Gross
- Additions
- Net Plant
- Accum Deprec
- Expense
- Removals
- Transfers – Accum
- Retirements

Please see “UG 388 OPUC DR 139 Attachment 1” for a redacted version of “UG 388 - Exh. 1000 - WP2 - Gross Plant, Accum Deprec and Deprec Exp - CONFIDENTIAL.xlsx”.

UG 388 OPUC Confidential DR 172 NWN Response Attachment 2 - REDACTED
Base Year
REDACTED
(Figures in 000's)

Total Income Tax Expense	$	15,510
Provision for Deferred Income Taxes - Federal	$ (3,908)	
Provision for Current Income Taxes - Federal	13,103	9,194
Provision for Deferred Income Taxes - State	1,399	
Provision for Current Income Taxes - State	4,918	6,316
Total Current and Deferred Income Tax Expense	$	15,510
Permanent and Flow-through Items	$	6,845
Temporary Items	$	(15,403)

BASE YEAR - CALENDAR YEAR 2019 - UTILITY

Taxable Income (Loss)				Total Tax Expense (Benefit)	Federal Deferred Tax Expense (Benefit)	State Deferred Tax Expense (Benefit)	Federal Current Tax Expense (Benefit)	State Current Tax Expense (Benefit)
PreTax Book Income		**$ 76,266**	**x** 27.00%	$ 20,595				
Permanent Differences								
Meals and Entertainment	630							
Parking and Transit	452							
AFUDC Equity	68							
Employee Stock Purchase Plan	173							
Total Permanent Differences		1,323	**x** 27.00%	357				
Flow-Through Items								
Depreciation	6,573							
Removal Costs	(1,051)							
Total Flow Through Items		5,522	**x** 27.00%	1,491				
Temporary Differences								
Fixed Asset Cost Recovery:								
[redacted]								
Total Depreciation		(14,348)			14,348	14,348		
Other Temporary:								
[redacted]	(20)							
Accrued Vacation	71							
[redacted]	(192)							
Allowance for Bad Debt Expense	18							
Bond Redemption Loss Amortization	276							
[redacted]	(448)							
Prepaid Insurance	(181)							
[redacted]	(79)							
	(501)							
Uniform Inventory Capitalization	-							
Total Other		(1,055)			1,055	1,055		
State Income Tax Deduction		(4,918)						
Federal Taxable Income		**62,790**						
Federal Income Tax Rate		21.00%						
Tentative Federal Tax		13,186						
Federal Income Tax Credits		(83)	**x** 100.00%	(83)				
Federal Income Tax Liability		13,103					13,102.51	
State Tax Differences								
Additional State Tax Depreciation	(3,001)					3,001		
Addback State Income Tax Deduction	4,918							
Total State Tax Differences		1,916						
State Taxable Income		**64,706**						
State Income Allocation		100.00%	} 7.60%					
State Income Tax Rate		7.60%						
Tentative State Tax Liability		4,918						
State Tax Credits		-	**x** 79.00%	-				
State Income Tax Liability		4,918						4,918
EDIT Amortization								
EDIT Plant				(1,559)	(7,425)			
EDIT Other - NonPlant				(3,998)	(19,039)			
EDIT Gas Reserves				(1,292)	(6,152)			
				$ 15,510	$ (17,213)	$ 18,405		
						7.60%		
					(1,399)			
					$ (18,612)			
					21.00%			
				$ 15,510	**= $ (3,908)**	**$ 1,399**	**$ 13,103**	**$ 4,918**

Total Tax Expense (Benefit)	Provision for Federal Deferred Tax Expense (Benefit)	Provision for State Deferred Tax Expense (Benefit)	Federal Current Tax Expense (Benefit)	State Current Tax Expense (Benefit)

Income tax expense can be calculated using two different methodologies and both of these methods arrive at the same result. Both approaches are provided above. The 'current' and 'deferred' tax provisions can be calculated and then combined to arrive at total income tax expense. The other, and more commonly used method, is to multiply pre-tax book income, along with permanent items, flow-through items, and tax credits, by the applicable income tax rates. As noted in the totals immediately above, these approaches arrive at the same result.

Oregon regulatory allocations are guided by ORS §757.269(1) which indicates rates include amounts for both the provision for current income taxes and the provision for deferred income taxes (i.e., income tax expense) that are based on estimated revenues from the regulated operations. The Oregon regulatory income tax expense allocation factors for the base year and test year are 89.43% and 89.33%, respectively.

UG 388 OPUC Confidential DR 172 NWN Response Attachment 2 - REDACTED
Test Year
REDACTED
(Figures in 000's)

Total Income Tax Expense		$ 4,422
Provision for Deferred Income Taxes - Federal	$ 2,013	
Provision for Current Income Taxes - Federal	(446)	1,566
Provision for Deferred Income Taxes - State	3,219	
Provision for Current Income Taxes - State	(363)	2,856
Total Current and Deferred Income Tax Expense		$ 4,422
Permanent and Flow-through Items		$ 6,836
Temporary Items		$ (39,667)

TEST YEAR - NOVEMBER 1, 2020 THROUGH OCTOBER 31, 2021 - UTILITY								
Taxable Income (Loss)			**Total Tax Expense (Benefit)**			**Federal Deferred Tax Expense (Benefit)**	**State Deferred Tax Expense (Benefit)**	**Federal Current Tax Expense (Benefit)**	**State Current Tax Expense (Benefit)**
PreTax Book Income		**$ 30,739**	**x**	27.00%	$ 8,301				
Permanent Differences									
[redacted]									
Total Permanent Differences		1,320	**x**	27.00%	356				
Flow-Through Items									
Depreciation	6,566								
Removal Costs	(1,050)								
Total Flow Through Items		5,516	**x**	27.00%	1,490				
Temporary Differences									
Fixed Asset Cost Recovery:									
[redacted]									
Total Depreciation		(38,621)				38,621	38,621		
Other Temporary:									
Accrued Severance									
Accrued Vacation									
Accrued Workers Compensation									
Allowance for Bad Debt Expense									
Bond Redemption Loss Amortization									
Prepaid Property Tax									
Prepaid Insurance									
Injury and Damages General Accrual									
Post Retirement Plan									
Uniform Inventory Capitalization									
Total Other		(1,046)				1,046	1,046		
State Income Tax Deduction		363							
Federal Taxable Income		**(1,729)**							
Federal Income Tax Rate		21.00%							
Tentative Federal Tax		(363)							
Federal Income Tax Credits		(83)	**x**	100.00%	(83)				
Federal Income Tax Liability		(446)						(446)	
State Tax Differences									
Additional State Tax Depreciation	(2,686)						2,686		
Addback State Income Tax Deduction	(363)								
Total State Tax Differences		(3,049)							
State Taxable Income		**(4,777)**							
State Income Allocation		100.00%	}	7.60%					
State Income Tax Rate		7.60%							
Tentative State Tax Liability		(363)							
State Tax Credits		-	**x**	79.00%	-				
State Income Tax Liability		(363)							(363)

EDIT Amortization					
EDIT Plant	(3,000)	(14,286)			
EDIT Other - NonPlant	-	-			
EDIT Gas Reserves	(2,642)	(12,579)			
	$ 4,422	$ 12,802	$ 42,352		
			7.60%		
		(3,219)			
		$ 9,584			
		21.00%			
	$ 4,422 =	**$ 2,013**	**$ 3,219**	**$ (446)**	**$ (363)**

Total Tax Expense (Benefit)	**Provision for Federal Deferred Tax Expense (Benefit)**	**Provision for State Deferred Tax Expense (Benefit)**	**Federal Current Tax Expense (Benefit)**	**State Current Tax Expense (Benefit)**

Income tax expense can be calculated using two different methodologies and both of these methods arrive at the same result. Both approaches are provided above. The 'current' and 'deferred' tax provisions can be calculated and then combined to arrive at total income tax expense. The other, and more commonly used method, is to multiply pre-tax book income, along with permanent items, flow-through items, and tax credits, by the applicable income tax rates. As noted in the totals immediately above, these approaches arrive at the same result.

Oregon regulatory allocations are guided by ORS §757.269(1) which indicates rates include amounts for both the provision for current income taxes and the provision for deferred income taxes (i.e., income tax expense) that are based on estimated revenues from the regulated operations. The Oregon regulatory income tax expense allocation factors for the base year and test year are 89.43% and 89.33%, respectively.

UG 388 OPUC Confidential DR 172 NWN Response Attachment 2 - REDACTED
Flow Through Items
(Figures in 000's)

The effects of flow-through accounting for the Test Year and the three most recent tax periods preceding the Test Year are presented below.

		Depreciation	Property Tax	Removal Costs	Portion of the Year	Total	Jurisdictional Allocation Factor - Oregon [A]	Oregon Allocated	Federal / Oregon Combined Inc. Tax Rate	Net Increase (Decrease) to Oregon Jurisdictional Tax Expense	
Three Tax Periods Preceding Test Year	2017	$ 7,350,000	$ 560,695	$ (1,175,000)	100%	$ 6,735,695	89.12%	$ 6,002,851.38	39.94%	$ 2,397,539	*Calendar Ta*
	2018	7,350,000	25,804	(1,175,000)	100%	$ 6,200,804	88.68%	$ 5,498,872.99	27.00%	$ 1,484,916	*Calendar Ta*
	2019	7,350,000	-	(1,175,000)	100%	$ 6,175,000	89.43%	$ 5,522,302.50	27.00%	$ 1,491,243	*Calendar Ta*
Test Year (Nov - Oct)	2020	7,350,000	-	(1,175,000)	17%	$ 1,029,167	89.33%	$ 919,354.58	27.00%	$ 248,263	
	2021	7,350,000	-	(1,175,000)	83%	$ 5,145,833	89.33%	$ 4,596,772.92	27.00%	$ 1,241,313	
			[B]							$ 1,489,575	*Fiscal Test Y*

[A] The 2017 and 2018 Oregon jurisdictional allocation figures agree to the earnings tests for those years as filed.

[B] The property tax flow-through item was fully amortized by the end of calendar year 2018

x Year 2017
x Year 2018
x Year 2019

'ear Ending 10/31/2021

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Request No.: UG 388 OPUC DR 192

192. Regarding the file UG 388 CUB DR 8 Attachment 3,
a. Regarding the fouled TEG,
i. Please provide a narrative description of how often the TEG has been replaced since 1998, testing results and observations prior to 2013, NW Natural's policy for replacement, and the industry standard replacement interval for the fluid.
ii. Please provide the cost of replacing 6,500 gallons.
1. Cost for the product only.
2. Cost including downtime, labor, disposal of the used fluid, equipment rental, etc.
b. Regarding the following statement on page 3 of 9: "A large labor cost difference is the primary driver of the incorrect estimations. It should be noted that this same large rate difference of quote versus estimate has been seen on several projects during the 2nd quarter of 2018."
i. Please provide a list of the projects, please include in the response all coding necessary for further inquiry, including but not limited to asset numbers, accounting work orders (AWO), project numbers, etc.
1. Please indicate whether the labor costs are internal to NW Natural or outside vendors.
2. Please indicate the source of the labor cost statistics used when estimating the job cost.

Response:

a. Regarding the fouled TEG:

i. Since 1998 the filters for the Large Dehydrator have been regularly replaced as required. In the process of changing these filters, additional TEG (glycol) has been added to the system to replace any TEG that was lost during this process. Prior to the complete replacement and testing of the TEG in 2017, no other complete replacement of the TEG was done. Please see the attached Log Book (UG 388 OPUC DR 192 Attachment 1) for the filter replacements and the partial TEG additions since 1998 through 2016 before the TEG was replaced in 2017.

ii. Regarding industry standard replacement interval for the fluid, please see page 8 and 9 of Mist DeHy Engineering Report UG 388 CUB DR 8 Attachment 1: "Glycol [TEG] life was advised by Brenntag to not have a set lifetime." Please also see page 14 of Mist DeHy Engineering Report UG 388 CUB DR 8 Attachment 1: "While TEG has no fixed usage life and can be recurrently used with regular filtration and additives, it is not uncommon for dehydration facilities to recharge their glycol approximately every 5 to 10 years to ensure efficient water absorption and prevent long term buildup of byproducts." Between 1998 and 2011, NW Natural regularly replaced the filters on the large dehydration system, and no degradation of TEG was observed. Beginning in 2011, filter changes were made more frequently and the Company began using corrosion inhibitors and pH adjustors as needed to maintain TEG integrity. One of the recommendations of the Engineering Study was to replace the TEG in 2017. The total cost for replacing the TEG, labor, equipment, and disposal was $58,897.78.

1. The cost of the TEG only was $31,489.78.

2. The cost for labor, equipment, and disposal (not including TEG) was $27,408.00.

b. Regarding the quoted statements, the "same large rate difference of quote versus estimate" includes the increases in contracting and subcontracting costs due to the tight labor market for skilled labor in the oil and gas industry nationwide. The improvement in the local and national economy between 2012 and 2018 led to most of the increase in the pipeline and facility project construction costs.

The following large projects were similarly estimated prior to 2018 based on historical project costs during the Planning phase. An estimate or range of the total project is provided during the Planning phase and is noted in "Move to Planning – total project estimate (without COH)" column below. These initial planning level estimates are typically based on labor and contracting costs from recently completed projects. During the Planning phase, the project team focuses on defining final design, budget, and schedule, including gathering bids to perform the construction. The "Move to Execution - Total project estimate (without COH)" column below represent all known costs necessary for constructing the project, including the bid costs received during the Planning phase.

Project	Project Number	Move to Planning - total project estimate (without COH)	Project Move to Planning date	Move to Execution - Total project estimate (without COH)	Project Move to Execution date
SE Eugene	201675	$3-4.5 million	5/10/2017	$8.09 million	4/30/2018
Newport LNG Glycol	201609	$495,000	6/7/2016	$1.0 million	5/18/2018
Newport LNG E3	201813	$735,470	11/21/2017	$1.32 million	5/21/2018
Newport LNG E5	201815	$661,820	11/21/2017	$1.29 million	5/18/2018

i. The bulk of the costs for each of the above projects is from outside vendors.
ii. Internal labor and equipment costs for construction or for vendors such as traffic control and paving were based on projected contract values. For specialized or specific work to be performed by outside contractors, the costs were estimated based on recent historical projects. The work was offered to contractors to bid, and the final move to execution estimate was based on the bids received.

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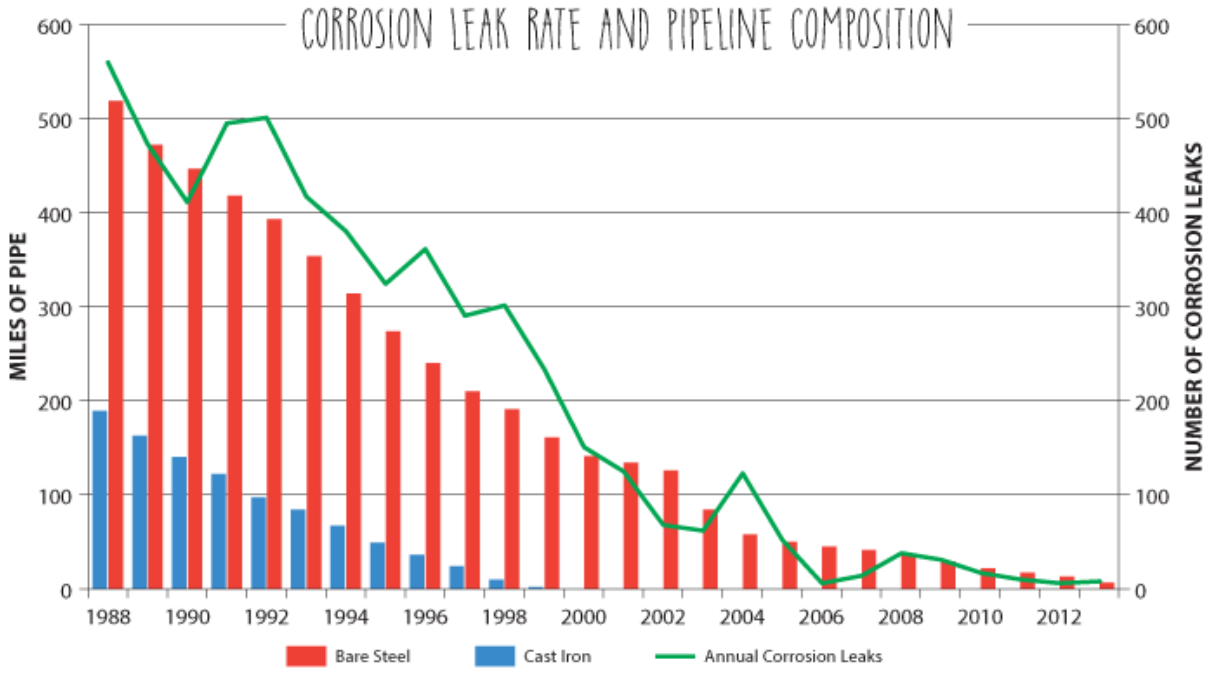
Request No.: UG 388 OPUC DR 207

207.Regarding Anderson 100/6 and the statement that NW Natural has "one of the tightest pipeline distribution networks in the country",
a.Please provide a narrative explanation of the objective data underlying this statement including data sources.

Response:

Between 1985 and 2015 NW Natural had an accelerated replacement program to remove and replace cast iron and bare steel pipelines with modern pipeline material. As NW Natural eliminated older types of pipelines, its rate of corrosion leaks fell substantially, as shown below.



S&P Global Market Intelligence published an article on August 22, 2019 (please see UG 388 OPUC DR 207 Attachment 1) that included data on the natural gas local distribution companies with the highest and lowest ratio of gas leak repairs compared to installed pipeline miles. Nationwide, NW Natural had the lowest ratio of repaired leaks to installed miles of pipe as shown below.

Gas utilities with the lowest ratio of distribution main and service line leaks repaired in 2018

					Distribution main and service materials (%)						
Company	States of operation	Ratio of repaired leaks to miles	Number of repaired leaks	Main and line length (miles)	Unprotected steel (bare)	Unprotected steel (coated)	Cathodically protected steel (bare)	Cathodically protected steel (coated)	Plastic	Iron*	Other
Puget Sound Energy Inc.	WA	0.07	1,731	25,937	0.00	0.00	0.00	23.29	76.71	0.00	0.00
Colorado Springs Utilities	CO	0.06	352	5,428	4.69	0.04	0.00	19.09	74.79	0.00	1.39
Rochester Gas and Electric Corp.	NY	0.06	564	9,018	0.48	0.50	0.08	39.24	58.68	0.01	1.02
New Mexico Gas Co. Inc.	NM	0.06	867	15,491	0.00	0.00	0.66	42.00	57.34	0.00	0.00
Wisconsin Gas LLC	WI	0.05	1,079	20,182	0.00	0.00	0.00	27.91	71.20	0.00	0.89
ENSTAR Natural Gas Co.	AK	0.05	295	5,998	0.00	0.00	0.02	12.99	86.58	0.00	0.41
New York State Electric & Gas Corp.	NY	0.04	369	8,383	1.52	2.72	0.08	31.30	63.43	0.10	0.85
West Texas Gas Inc.	LA, NM, OK, TX	0.04	246	5,853	2.12	1.01	2.18	13.71	80.98	0.00	0.00
Wisconsin Electric Power Co.	MI, WI	0.04	632	17,030	0.00	0.00	0.00	23.40	76.60	0.00	0.00
Northwest Natural Gas Co.	OR, WA	0.03	804	23,824	0.00	0.00	0.00	38.47	61.53	0.00	0.00

Data compiled Aug. 6, 2019.
* Includes cast and ductile iron.
Includes companies with at least 5,000 miles of distribution mains and service lines.
Service line length estimated from count of lines and average length.
Source: S&P Global Market Intelligence

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Request No.: UG 388 OPUC DR 208

208.Regarding Anderson 100/7 and the buildout of service pipelines to support the Columbia Boulevard Wastewater Treatments Plant,
a.Please provide a list of the projects including in the response all coding necessary for further inquiry, including but not limited to asset numbers, accounting work orders (AWO), project numbers, etc.
b.Please indicate if the cost of these projects was shared by the City of Portland and the amount of the total project cost contributed.

Response:

a. The internal project number for the Columbia Boulevard Wastewater Treatment Plant is 201828.

b. Yes, the City of Portland is sharing in the project cost. They have contributed $778,850 to date.

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Request No.: UG 388 OPUC DR 209

209.Regarding Anderson 100/7 and the high pressure gas service related to the City of Portland RNG fueling facility,
a.Please indicate if there is incremental plant in this rate case associated with the high pressure gas service.
b.If so, please provide a list of the projects including in the response all coding necessary for further inquiry, including but not limited to asset numbers, accounting work orders (AWO), project numbers, etc.
c.If so, please indicate if the cost of these projects was shared by the City of Portland and the amount of the total project cost contributed.

Response:

a. There is $1.2 million of incremental plant associated with the high-pressure service at the City of Portland RNG fueling facility that was placed in service in January 2018. The cost of service for the incremental plant is being recovered directly from the City of Portland for high pressure gas service through monthly billings under Schedule H. NW Natural has not sought recovery of this service in this rate case.

b. Not applicable.

c. Not applicable.

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Request No.: UG 388 OPUC DR 210

210.Regarding UG 388 DR 131 CONF Attachment 1.xlsx and UG 388 DR 131 CONF Attachment 2.xlsx,
a.Please provide these files in the same format as the UG 344 rate case. Specifically, with construction overhead (COH) on a separate line.
b.Please provide an inception to date summary of the North Mist Storage project including:
i.Amount capitalized through September 2019.
ii.Amount in COH as of September 2019.
iii.Additional amounts forecast from October through December 2019.
iv.Additional amounts forecast for 2020.
v.A reconciliation to the total project cost underlying Order No. 19-361.
vi.A narrative explanation of how this project is being excluded from the rate case including FERC accounts and citing the relevant rate case work papers.
c.Please identify the parcels of land being purchased in 2019 and 2020 ($1,063,360 and $905,118, respectively).

Response:

a. See attached files UG 388 DR 210 CONF Attachment 1 – Capital Budget.xlsx and UG 388 DR 210 CONF Attachment 2 – Capital Forecast.xlsx.

b. i. The amount capitalized through September 2019 is $144.5 million of capital plus $2.7 million of recoverable base gas, for a total project life-to-date spend of $147.2 million.

   ii. The COH in the deferred liability account (154002/154003) at September 2019 was $1.3 million, consistent with the Company's Advice No. 19-13A (Credits to Customers Related to the North Mist Expansion Project, Schedule 170), approved by the Commission in Order No. 19-361 in Docket UG 381. In accordance with Order No. 19-361, that amount was credited to customers on November 1, 2019.

iii. The additional amounts incurred from October through December 2019 totaled $1.0 million.

iv. The additional forecast for 2020 for the initial construction project totals $555 thousand.

v. Order No. 19-361 indicates a forecasted project cost rounded to $149 million. The project cost estimate has not changed (i.e., $147.2 million + $1.0 million + $555 thousand = $148.755 million, which rounds to $149 million).

vi. All project costs are either in CWIP (107007) or unique FERC accounts (106001 & 101001). Those project costs were omitted from the rate case; as such, there are no work papers showing the removal of those omitted project costs.

c. The parcel of land being purchased, initially in 2019 and then delayed until 2020, was the Lincoln City Land purchase. The original plan to purchase in 2019 ($1,063,360 budgeted) was delayed and pushed out to 2020 (updated budget of $905,118), which is why the same purchase shows up in both the 2019 budget and the 2020 forecast.

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Request No.: UG 388 OPUC DR 212

212.Regarding the Company's response to DR 130,
a.Please indicate when the 4th quarter 2019 amounts are to be released to the public and become non confidential.

Response:

NW Natural's earnings release of 4th quarter 2019 results is scheduled for March 2, 2020. Results will be released to the public and become non-confidential after the earnings release.

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Request No.: UG 388 OPUC DR 213

213.Regarding the Company's response to DR 132,
a.Please define the acronym "TECO" and provide a narrative explanation of what event this represents in the project delivery process.
b.Regarding the following projects with an estimated in-service date beyond the test year,
i.Projects:
1.201799 - Central Resource Center
2.201953 - SAP Study
3.201960 - CIS Study
4.201757 - Portland LNG Liquefaction Alt Study
ii.Please confirm that no costs for these projects has been include in the requested rate base in this case.
iii.Please provide a narrative explanation of the nature of each project and the expected total cost of the project.
c.Regarding the stated CWIP totals ($48.6 million and $82.2 million as of 12/31/18 and 9/30/19, respectively) please provide a detailed reconciliation to the CWIP figures provided in response to DR 127 which Staff notes are substantially higher.

Response:

a. In the SAP Project Systems module, "TECO" stands for Technically Complete. It is a project or work order status change that moves the construction dollars from CWIP (107) to Construction Unclassified (106) (i.e. in-service). This stops the accumulation of AFUDC and initiates monthly depreciation expense.

b. See below:

    1. 201799 - Central Resource Center – No costs for this project are included in the requested rate base in this case. Please see NW Natural/500/Pipes/Pages 45-46 for a narrative explanation of the nature of this project.

2. 201953 - SAP Study – No costs for this project are included in the requested rate base in this case.

   The SAP Study project will evaluate the current and future state of the Company's SAP platform, so that projects required to move the Company to the future state have clearly identified dependencies and are staged appropriately to reduce risk for implementation. The expected total cost of the project is $2.1 million.

3. 201960 - CIS Study - No costs for this project are included in the requested rate base in this case.

   The CIS Study project will evaluate the future state of the Company's CIS and integrated systems, so that projects required to move the Company to the future state have clearly identified dependencies and are staged appropriately to reduce risk for implementation. The expected total cost of the project is $1.2 million.

4. 201757 - Portland LNG Liquefaction Alt Study – The Portland LNG Liquefaction Alt Study inadvertently was included in the requested rate base for the Test Year in this case. It is expected that the study will be complete prior to the new rate effective period; however, the underlying Portland LNG Liquefaction project is not planned to be completed until after the Test Year. The study, therefore, should not have been assumed to be in-service. The total project cost is $968,943, the Oregon allocated amount included in the requested rate base is $865,848.

   This project will provide updated piping and instrumentation drawings (P&ID) for the liquefaction system, identify the repairs and/or improvements required for the liquefaction system at the Portland LNG facility, and evaluate alternatives in lieu of making improvements to the liquefaction system.

c. The stated CWIP totals in the Company's response to UG 388 OPUC 132 do not tie to the AFUDC totals in the Company's response to UG 388 OPUC DR 127 because NW Natural calculates the monthly AFUDC rate using 12-month average, not the month-end balance. Accordingly, the actual CWIP balance does not reconcile to the average CWIP used for AFUDC rate calculations.

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Request No.: UG 388 OPUC DR 227

227. Regarding UG 388 DR 134 Attachment 1.xlsx and the following projects therein,
a. Projects:
i. Miller Station TI
ii. Mist Compressor Rebuild 500
iii. Mist Compressor Study & Replacement
iv. Mist Corrosion Abatement Phase 3
v. Mist Corrosion Abatement 4
vi. Mist Electrical Systems Updates
vii. Mist Fiber Network
viii. Mist Pipeline Upgrades
ix. Mist Valve Control Upgrades
x. Mist Well Rework
xi. Mist Well Rework 2020
xii. Mist Well Rework 2021

b. Please provide a detailed narrative description for each project describing what is being purchased, how the project specifically benefits Oregon ratepayers, why the investment is necessary at this time, what other alternatives were considered, and what would occur if the investment is not made.

c. Please provide a narrative description of how the projects interrelate to each other and the two Mist projects specifically discussed in testimony (Mist Instrument and Controls Upgrade Ph. 2 and Mist Large Dehydrator).

Response:

a. NW Natural's utility customers currently receive underground storage service at Mist through the Miller Station central control and compressor facility using depleted production reservoirs collectively referred to as "Mist storage." Mist storage began storage operations in 1989 and currently has a maximum total daily deliverability of 515 million cubic feet per day (MMcf/day), and a total working gas capacity of 16 billion cubic feet (Bcf). It is identified in NW Natural's 2018 Integrated Resource Plan (IRP), LC 71 – Chapter 6 Supply Side Resources, as a resource necessary to meet customer demand. Natural gas is injected into the reservoirs during periods of low demand and withdrawn during periods of higher demand. As a resource used for seasonal storage, NW Natural requires high availability and reliability from the Mist storage. The Mist storage facility and its major process components were designed for a nominal 25- to 30-year life, and now is experienced increased

maintenance needs due to age. The projects below are necessary for the safe operation and availability of the Mist storage facility and to allow it to remain a supply source to meet firm customer demand.

b. For each project:

i. Miller Station TI (Tennent Improvements) Project is a project to reconfigure spaces totaling approximately 1,430 SF within the existing metal building envelope of the current structure. Scope of work includes select removal of finishes, new walls to extend to decking above existing acoustic ceiling tiles at 9' AFF (above finish floor), reconfiguration of the existing lighting and occupancy sensors, HVAC modifications, new wood doors with sidelights and locking hardware, acoustical insulation and new carpet and finishes. Additional scope includes providing a Stormwater Management Plan including paving on the upper portion of the site to the north of the existing building. The original control building is over 25 years old and has not been substantially updated. The employee footprint has grown to 15 employees and the current layout is inadequate for that number of employees. The increase in the number of employees is due to Control Room Management regulation requiring additional staffing at the facility. Furthermore, there is an underground sewer leak, sealing issues allowing mice to enter the structure, and stormwater causing erosion. This project is needed at this time to correct these issues and allow for continued use of the existing building. Not performing the improvements is not an option with the new employee footprint, and not addressing the other issues would cause more expensive repairs in the future. Constructing a new building would be more expensive than performing these improvements. Oregon ratepayers benefit from this project because it allows for the safe operation of the Mist storage facility and for it to remain a supply source.

ii. Mist Compressor Rebuild 500 Project involves rebuilding a turbine compressor that is necessary to operate the Mist storage facility. The compressors at Mist are critical for both injecting gas into the storage fields and withdrawing gas to send to customers. Specifically, this project involves investigating the extent of compressor wear, refurbish or replace worn parts, and reinstall the compressor at Mist. The investment is necessary at this time due to issues experienced on the Mist 500 Compressor in the winter of 2018/19. The only alternative would be to replace the Mist 500 Compressor with a new compressor at a significantly higher cost. If the investment was not made, the Mist 500 compressor would not be available and the Mist storage facility would be not be able to deliver its rated delivery capacity. Oregon ratepayers benefit from this project because it allows for the safe operation of the Mist storage facility and for it to remain a supply source.

iii. Mist Compressor Study and Replacement Project will assess the current four Mist compressor units (two smaller reciprocating units and two larger turbine units) and evaluate the long-term needs (technical and usage demands) to

assure continued deliverability of the Mist storage facility. The study will deliver recommendations that may include options for component modernization, integration, and/or full replacement of obsolete / failing equipment. Deliverables include a third-party consultant report outlining the existing compressor system demands, condition of existing compressor infrastructure, and recommendations that will include upgrade or replacement of the existing systems along with potential compressor brands and models. The project is needed now because all four of the units have experienced issues during the last several years due to age, outdated/ unsupported systems, mechanical fatigue, abnormal/non-ideal operations, or combinations thereof. The project will gather the information necessary to present projects in the IRP process. The only alternative to doing this project would be to not study repair and replacement options of the compressors. The Company would then not have the appropriate information to support the IRP process. Oregon ratepayers benefit from this project because it allows the Company to identify the least cost, least risk way to provide supply from the Mist storage facility.

iv. Mist Corrosion Abatement Phase 3 Project utilized In-Line Inspection (ILI) tools to evaluate the existing conditions and validate the integrity of the following injection/withdrawal pipelines: 8” Busch Manifold to Busch Pool, 8” Busch Manifold to Al’s View Lot, and 6” Al’s View Lot to Al’s Pool. These pipelines required modifications to allow for the ILI, including the installation of pig launcher and receiver connection valves to allow for temporary pig barrels to be attached during the ILI. The 2016 EN Engineering report recommended these modifications and inspections since there is a threat of internal and external corrosion on these pipelines. If there were failure on one of the pipelines due to an anomaly, the Mist storage facility would be unable to inject and withdrawal gas as designed. The investment is necessary at this time to assess the risk and repair any anomalies prior to failure. The only alternative would be to not perform the pipeline modifications and ILI assessments. Not performing the inspections would leave a higher risk of pipeline failure. See UG 388 OPUC DR 227 Attachment 1. Oregon ratepayers benefit from this project because it allows for the safe operation of the Mist storage facility and for it to remain a supply source.

v. Mist Corrosion Abatement Phase 4 Project utilized In-Line Inspection (ILI) tools to evaluate the existing conditions and validate the integrity of the following injection/withdrawal pipelines: 8” Flora ILI Loop - from Miller Station to Flora and back to Miller Station, 8” Bruer ILI - from Miller Station to Bruer Pool (lW22d-10), and 12” Bruer P64.04 ILI - from Miller Station to Storage Well 13b-11-65. These pipelines require modifications to allow for the ILI, including the installation of pig launcher and receiver connection valves to allow for temporary pig barrels to be attached during the ILI. The 2016 EN Engineering report recommended these modifications and inspections since there is a threat of internal and external corrosion on these pipelines. If there

were failure on one of the pipelines due to an anomaly, the Mist storage facility would be unable to inject and withdrawal gas as designed. The investment is necessary at this time to assess the risk and repair any anomalies prior to failure. The only alternative would be to not perform the pipeline modifications and ILI assessments. Not performing the inspections would leave a higher risk of pipeline failure. See UG 388 OPUC DR 227 Attachment 1. Oregon ratepayers benefit from this project because it allows for the safe operation of the Mist storage facility and for it to remain a supply source.

vi. Mist Electrical Systems Updates Project is a collection of electrical upgrades at the plant, including a new Motor Control Cabinet (MCC) for the electrical room, MCC breaker upgrades, MCC upgrade for mechanical building, and a new 750 kVA transformer. Additionally, Conduct Grounding, Power Quality, and Arc Flash Studies will be performed to assess if additional work is necessary. The 2016 EN Engineering report recommended these investments and studies based on the existing electrical infrastructure being end of life and to allow for adequate electrical capacity for future projects. The investment is necessary at this time to allow for the safe operation of Mist Storage. The only alternative would be to not perform the electrical system updates. Not performing the investment would leave a higher risk of electrical system failure. Oregon ratepayers benefit from this project because it allows for the safe operation of the Mist storage facility and for it to remain a supply source.

vii. Mist Fiber Network Project will install a new fiber network from Miller Station to systems at Bruer and Flora wells at the Mist gas storage facility. The fiber to the Flora wells will be placed in existing underground conduits. The new fiber network to the Bruer wells will require the construction of new underground conduits and vaults. The investments are required now because tree heights around the wells have reached a level such that they now interfere with radio communications and NW Natural does not control the land covering the trees. Adding a fiber optic network for the northern wells will provide a redundant communications system and eliminate issues due to tree growth. The southern wells already have a fiber optic network in place for communication. The only alternative would be to not perform the Mist Fiber Network Project. See UG 388 OPUC DR 227 Attachment 2. Not performing the investment would prevent NW Natural from being able to monitor and control the Bruer and Flora wells. Oregon ratepayers benefit from this project because it allows for the safe operation of the Mist storage facility and for it to remain a supply source.

viii. Mist Pipeline Upgrades Project will remove restrictions within the injection/withdrawal pipelines to improve flow efficiency. Improvements will include replacing pipeline flow choke points, interconnecting some piping with a nearby system, and abandoning a portion of one system to maintain a more constant flow within that system. Specific investments include

replacing 10-inch and 8-inch single line section at Al's View Lot with a 12-inch pipeline to reduce gas velocities, adding automated valves and controls for the Twin 16-inch pipelines, retiring the Bruer South Loop, and replacing Bruer and Flora 12-inch pipe connection to the 20-inch turbine headers with 16-inch pipe. These investments are based on recommendations contained in the 2016 EN Engineering report. These modifications will optimize gas flow through the network of injection and withdrawal pipelines, preventing issues that may arise from choke points or from liquid buildup, and allow for independent operation of each well. The investments are required now to remove inefficiencies that currently exist in the pipeline system at Mist Storage. The only alternative would be to not perform the Mist Pipeline Upgrades Project. Not performing the investments would maintain existing flow restrictions within the pipeline system. Oregon ratepayers benefit from this project because it allows for the efficient operation of Mist storage and for it to remain a supply source.

ix. Mist Valve Control Upgrades Project corrects multiple issues identified with existing valves at the Mist Storage facility, including end of life and failing equipment, leaking valves and valve appurtenances, and installing double block and bleed configurations to improve safety during maintenance. These current issues pose safety hazards when future maintenance and upgrades work needs to be completed and when trying to properly isolate systems for plant operation. The project will install new valves, valve controllers, valve actuators and associated components. The investment is necessary at this time to eliminate safety hazards. The only alternative would be not performing the Mist Valve Control Upgrades Project. Not performing the investments would maintain known safety hazards. See UG 388 OPUC DR 227 Attachment 3. Oregon ratepayers benefit from this project because it allows for the safe operation of the Mist storage facility and for it to remain a supply source.

x. Mist Well Rework Project included the replacement of major downhole components of the underground infrastructure in a number of NW Natural's storage reservoirs at Mist. The work included replacement of the primary well barrier elements between the storage reservoir and external environment: production tubing strings, production packers, and Christmas tree master valves. This project included the rework of nine of the wells at Mist Storage in 2019. The work is required by PHMSA's 2017 Underground Storage Facilities Interim Final Rule (the final rule was published February 12, 2020 and becomes effective March 13, 2020), which requires NW Natural to assess of the operational safety of their underground natural gas storage facilities and remediate any identified issues. The investment is necessary at this time for regulatory compliance, and there are no alternatives to performing the assessment and remediation. See UG 388 OPUC DR 227 Attachment 4. Oregon ratepayers benefit from this project because it allows for regulatory compliance, the safe operation of the Mist storage facility, and for it to remain a supply source.

xi. Mist Well Rework 2020 Project will include the replacement of major downhole components of the underground infrastructure in a number of NW Natural's storage reservoirs at Mist. The work will include the replacement of the primary well barrier elements between the storage reservoir and external environment: production tubing strings, production packers, and Christmas tree master valves. This project will include the rework of seven of the wells at Mist Storage in 2020. The work is required by PHMSA's 2017 Underground Storage Facilities Interim Final Rule (the final rule was published February 12, 2020 and becomes effective March 13, 2020), which requires NW Natural to assess of the operational safety of their underground natural gas storage facilities and remediate any identified issues. The investment is necessary at this time for regulatory compliance, and there are no alternatives to performing the assessment and remediation. See UG 388 OPUC DR 227 Attachment 4. Oregon ratepayers will benefit from this project because it allows for regulatory compliance, the safe operation of the Mist storage facility, and for it to remain a supply source.

xii. Mist Well Rework 2021 Project will include the replacement of major downhole components of the underground infrastructure in a number of NW Natural's storage reservoirs at Mist. The work will include the replacement of the primary well barrier elements between the storage reservoir and external environment: production tubing strings, production packers, and Christmas tree master valves. This project will include the rework of wells at Mist Storage in 2021. The work is required by PHMSA's 2017 Underground Storage Facilities Interim Final Rule (the final rule was published February 12, 2020 and becomes effective March 13, 2020), which requires NW Natural to assess of the operational safety of their underground natural gas storage facilities and remediate any identified issues. The investment is necessary at this time for regulatory compliance, and there are no alternatives to performing the assessment and remediation. See UG 388 OPUC DR 227 Attachment 4. Oregon ratepayers will benefit from this project because it allows for regulatory compliance, the safe operation of the Mist storage facility, and for it to remain a supply source.

c. All of these projects are necessary for the ongoing safe operation and availability of Mist storage facility and to allow it to remain a supply source to meet peak firm customer demand.

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Request No.: UG 388 OPUC DR 228

228. Regarding UG 388 DR 134 Attachment 1.xlsx and the following projects therein,
a. Projects:
i. Newport LNG Readiness 2017
ii. Newport LNG Standby Generator
iii. Newport LNG Tank Foundation Evaluation
iv. Newport Switchgear Replacement 12 Kv
v. Newport Vaporizer H2 Controls
b. Please provide a detailed narrative description for each project describing what is being purchased, how the project specifically benefits Oregon ratepayers, why the investment is necessary at this time, what other alternatives were considered, and what would occur if the investment is not made.
c. Please provide a narrative description of how the projects interrelate to each other.

Response:

a. The Newport LNG plant was constructed by Chicago Bridge and Iron and commissioned in 1977. It is located in Newport, Oregon and has a storage capacity of approximately 300,000 barrels of LNG. It is identified in NW Natural's 2018 Integrated Resource Plan (IRP), LC 71 – Chapter 6 Supply Side Resources, as a resource necessary to meet peak customer demand. Natural gas is liquified and placed into storage at Newport LNG during off-peak periods, and is vaporized when needed during peak periods. As a resource specifically used for peak shaving, NW Natural requires high availability and reliability from the Newport plant. The Newport facility and its major process components were designed for a nominal 25- to 30-year life, and it is now over 40 years old. The projects below are necessary for the safe operation and availability of the Newport LNG plant and to allow it to remain a supply source to meet peak firm customer demand.

b. For each project:

i. The Newport LNG Readiness 2017 Project was an umbrella project for small capital improvement projects at the Newport LNG facility. Improvements included the installation of:

1. Pressure and temperature transmitters, fire detectors, field instrumentation displays and associated conduit and piping to allow for better monitoring and improved safety.

2. A separator drain tank to handle liquids that formed during the liquefaction process to increase plant reliability and up-time.

3. Cryogenic insulation to replace existing insulation that had reached end of life at the facility.

4. A refurbishment of an LNG transfer pump due to the existing one reaching end of life.

5. New flow meters to replace existing original flow meters that were no longer performing.

This umbrella project was necessary for the continued safe operation and availability of the Newport LNG facility and to allow it to remain a supply source to meet peak firm customer demand. Without these improvements, the plant would have increased downtime and decreased its ability to liquify or vaporize LNG as needed. Oregon ratepayers benefited from these improvements because it allowed the Newport LNG plant to remain a supply source.

ii. The Newport LNG Standby Generator Project was a project to design and install a new natural gas standby generator and associated electrical components. The existing diesel standby generator was end of life and was retired. An operational standby generator is a critical component of an LNG facility and is necessary for the safe operation and availability of the Newport LNG facility. Without a standby generator, the plant would not be able to monitor or operate in holding mode during a power outage. Also, the plant would be unable to compress and reinject any boil off gas during a power outage. Per 49 CFR §193.2613 the standby generator must be tested monthly to ensure its operational capability. Three different configurations and sizes of generators were evaluated, sized for holding (boiloff); sized for holding and vaporization; and sized for holding, vaporization, and liquefaction. The “holding only” solution was selected due to the other cases requiring multiple generators. Oregon ratepayers benefited from this project because it allowed the Newport LNG to remain a supply source. This project was included in NW Natural’s 2018 IRP Appendix F (LC 71, F.9).

iii. The Newport LNG Tank Foundation Evaluation Project is a project to develop a ground improvement design. The design would stabilize the ground surrounding the LNG tank and reduce lateral spreading in the event of a Cascadia earthquake. The study will develop forecasted project costs, construction impacts to LNG production, determine construction risks and a project schedule. The findings would be reviewed by NW Natural and

communicated via an IRP prior to proceeding to construction. The ground stabilization will increase the resiliency and availability of the Newport LNG facility post seismic event. If the improvements are not made, the facility is susceptible to damage from a Cascadia earthquake due to lateral spreading. This project was included in NW Natural's 2018 IRP Appendix F (LC 71, F.9). Oregon ratepayers will benefit from this project because it will allow the Newport LNG to remain a supply source.

iv. The Newport Switchgear Replacement 12 KV Project is a project to replace the incoming transformer. The current transformer is no longer sized correctly for current plant load and creates an arc flash hazard. The transformer is a critical component of an LNG facility and is necessary for the safe operation and availability of the Newport LNG facility. Oregon ratepayers will benefit from this project because it will allow the Newport LNG to remain a supply source.

v. The Newport Vaporizer H2 Controls Project will replace the majority of the piping and automation components mounted on the deck of the H-2 Vaporizer at Newport LNG. The equipment will be purchased from the original manufacturer of the vaporizer OEM (Linde) in a skidded system to be installed onto the vaporizer. Additionally, a preprogramed Linde automation controller will be purchased to replace existing vaporizer controls. Both vaporizers (H-1 and H-2) are required for the plant to reach the facility's defined send out capacity of 60 MMSCF per day. This project will extend the useful life of the H-2 vaporizer. The current components are at end of life and may not be repairable. For example, the industrial computer control system for H-2 is no longer supported by the manufacturer and new components are not produced. Please see UG 388 OPUC DR 228 Attachment 1 for the project's Alternative Analysis. This project was included in NW Natural's 2018 IRP Appendix F (LC 71 F.10). Oregon ratepayers will benefit from this project because it will allow the Newport LNG to remain a supply source.

c. As described above, all of these projects are necessary for the ongoing safe operation and availability of the Newport LNG facility and to allow it to remain a supply source to meet peak firm customer demand.

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Request No.: UG 388 OPUC DR 229

229. Regarding UG 388 DR 134 Attachment 1.xlsx and the following projects therein,
a. Projects:
i. Port LNG Liquification Alt Study
ii. Port. LNG PLC Replacement
iii. Portland LNG ICS Network Segmentation
b. Please provide a detailed narrative description for each project describing what is being purchased, how the project specifically benefits Oregon ratepayers, why the investment is necessary at this time, what other alternatives were considered, and what would occur if the investment is not made.
c. Please provide a narrative description of how the projects interrelate to each other

Response:

a. The Portland LNG plant was constructed by Chicago Bridge and Iron and commissioned in 1969. It is located in Portland, Oregon and has a storage capacity of approximately 175,000 barrels of LNG. It is identified in NW Natural's 2018 Integrated Resource Plan (IRP), LC 71 – Chapter 6 Supply Side Resources, as a resource necessary to meet peak customer demand. Natural gas is liquified and placed into storage at Portland LNG during off-peak periods, and is vaporized when needed during peak periods. As a resource specifically used for peak shaving, NW Natural requires high availability and reliability from the Portland plant. The Portland facility and its major process components were designed for a nominal 25- to 30-year life, and it is now over 50 years old. The projects below are necessary for the safe operation and availability of the Portland LNG plant and to allow it to remain a supply source to meet peak firm customer demand.

b. For each project:

i. The Portland LNG Liquefaction Alternative Study Project will study the repair and/or improvements required for the liquefaction system at the Portland LNG facility and evaluate alternatives in lieu of making improvements to the liquefaction system. The project will study the liquefaction system condition and recommendations for needed refurbishments or replacement. The project will also include associated geotechnical studies, required permits, and the identification and assessment of alternatives to repairing or replacing

the liquefaction system. The project will also update the piping and instrumentation drawings (P&ID) to facilitate the analysis. This project will gather the information necessary to present projects in the IRP process. The project was necessary now due to the liquefaction system reaching end of life. The only alternative to doing this project would be to not study repair and replacement costs of the liquefaction system or the alternatives. The Company would then not have the appropriate information to support the IRP process. Oregon ratepayers benefit from this project because it allows the Company to identify the least cost, least risk way to provide supply.

ii. The Portland LNG PLC Replacement Project will replace the existing PLC-5 and several field cabinets at Portland LNG. A PLC (Programmable Logic Controller) is an industrial computer control system. The completion of this work will support the implementation of new cyber security systems. This PLC is past the end of its operable life and not supported by Rockwell. The Processor is over utilized; as items are added, the expected reliability is diminished. This equipment is required for nearly all functions in the facility and is critical to operate the plant safely. The project will install a new PLC system including field rack I/O (input/output) cabinets and associated components. The investment is necessary due to the current PLC being end of life and not supported by the manufacturer. The only alternative to doing this project would be to not upgrade the current PLC and leave it as it is today. If the investment is not made the plant would become unavailable and inoperable if the current PLC were to fail. Oregon ratepayers benefit from this project because it allows the Portland LNG to remain a supply source.

iii. The Portland LNG ICS Network Segmentation Project will build a new network that is segmented from other networks to support the industrial control systems (ICS) at Portland LNG. This new network will prioritize security and reliability. The increasing vulnerability of industrial control systems to nefarious players necessitates protection from the outside world in the form of network containment. These protective measures isolate our LNG systems from potential threats, while enabling better control over this critical supply source infrastructure to the benefit of Oregon ratepayers. Implementing this in coordination with the Portland LNG PLC Replacement project will be less disruptive than implementing it at another time. Additionally, time is of the essence as cybercriminal activity for SCADA systems is on the rise. In 2019, NW Natural volunteered for a Corporate Security Review conducted by the Transportation Security Administration. This review reinforced NW Natural's existing plan to execute this project. This project will help us meet some of the recommendations from the TSA study, other outside experts, and NW Natural staff. The only alternative to doing this project would be to not segment the industrial control system and leave it integrated as it is today. This was not selected based on internal and external assessments, because appropriate controls would not be implemented and vulnerabilities would continue to exist. Many of the

recommendations from assessments by the TSA, other outside experts, and NW Natural staff would not be implemented.

c. The Portland LNG PLC Replacement Project and the Portland LNG ICS Network Segmentation Project are interrelated, as indicated above in responses b.ii and b.iii. The Portland LNG PLC Replacement Project will support the implementation of the Portland LNG ICS Network Segmentation Project. These projects are necessary for the safe operation and availability of the Portland LNG facility and to allow it to remain a supply source to meet peak firm customer demand. The Portland LNG Liquefaction Alternative Study Project will allow the Company to support the IRP process and make an informed decision about the least cost, least risk way to provide supply.

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Request No.: UG 388 OPUC DR 230

230. Regarding UG 388 DR 134 Attachment 1.xlsx and the following software and/or IT projects,

a. Projects:
i. Application Lifecycle Mgmt – PCAD
ii. BI Strategy / Power BI Deployment
iii. Composition Hardware & Software
iv. Contact Center IVR Implementation
v. Desktop Virtualization (Hardware)
vi. Desktop Virtualization (Software)
vii. Field & Web Mapping Implementation Phase 1
viii. Gas Control Room CRM HMI
ix. Success Factors Recruiting Mgmt Impl

b. Please provide a detailed narrative description for each project describing what is being purchased, how the project specifically benefits Oregon ratepayers, why the investment is necessary at this time, what other alternatives were considered, and what would occur if the investment is not made.

c. Please provide a narrative description of how the projects interrelate to each other and the following projects specifically discussed in testimony,
i. COM (Customer Order Management) (Software)
ii. Data Center Migration and Modernization (HW)
iii. Data Center Migration and Modernization (SW)
iv. Digital Portal
v. Skype for Business

Response:

a. No data requested.
b.i. Application Lifecycle Management – PCAD

Description of the project:

Lifecycle upgrade for the Mobile Workforce Management System PCAD (Pragma-CAD and the MobLite mobile solution).
Pragma-CAD is a Mobile Workforce Management Solution (a.k.a. “Dispatch Application”); Pragma-CAD is routinely referred to as “P-CAD”. The RMC (Resource Management Center) uses P-CAD to assign field work orders to field personnel. Field

work orders include emergency response work, compliance work, customer requested work, billing and account work, engineering work, etc. NW Natural processes approximately 500,000 work orders annually for our customers using these applications.

The P-CAD application relies upon having a mobile solution to communicate with, which is loaded onto our field personnel's mobile laptops. The mobile application is called MobLite and it works in conjunction with P-CAD to communicate from the dispatch application to the mobile laptops and from the mobile laptops to the dispatch application and ultimately with other systems such as our Customer Information System. The applications communicate via cellular data services.

These applications (P-CAD and MobLite) are extremely important for NW Natural and our customers in order to process nearly all of our field work. There are a variety of reasons that it is necessary to maintain these applications; examples include: to maintain currency for security, for interactions with cellular networks as they modernize, to maintain support from technology providers, to integrate with other applications as they are updated, additionally, as these applications evolve there are opportunities to leverage these tools to improve work processes that support and serve our customers.

How the project specifically benefits Oregon ratepayers:

This system is used for the assignment, monitoring and work completion of service and construction work by NW Natural field technicians and crews. Examples of work that is processed through the system include all work orders for emergency response, customer service appointments, service installations, maintenance and repairs. It is important to ensure that this system is effectively maintained because this system supports safety, compliance and customer service. The criticality of this system to NW Natural operations drives the need to ensure that it is upgraded to limit the risk associated with end of life software.

Please see NW Natural/600/Downing/Pages 4-5 for additional information regarding the Company's current IT&S environment and its over-arching IT&S strategic goal of undertaking efforts that specifically benefit Oregon customers.

Why the investment is necessary at this time:

The mobile component for this system (used by NW Natural field employees to receive and complete work) has reached the end of life. It is supported, but no new functionality is available for the application. The new version has improved routing capabilities and web-based back-office and mobile functionalities.

What other alternatives were considered:

The Company could make no changes and use an end-of-life system, or it could update the system or find new systems. The Company will continue to explore alternatives before the project is implemented.

What would occur if the investment were not made:

Business risk is increased with a major component of application being end of life. With the mobile component being end of life and on extended support, the product has no promise of being supported after support extension ends. This project upgrades to the current version with no interruption of support.

b.ii. BI Strategy/Power BI Deployment

Description of the project:

The focus of this project is on developing capabilities on the enterprise data and analytics platform with an objective of enabling more data-driven business decision-making. The project aims to deliver the following capabilities: (1) Design, develop and document processes to move data from source systems into the data platform, (2) Assist Business Analytics and IT&S in the design and implementation of a data governance capability focused on people, process and technology elements, and (3) Design, build, test and deploy into production operational dashboards using the Microsoft Power BI stack for business consumption. This will enable the business to make data driven decisions and demonstrate initiative outcomes as the data warehouse is developed.

How the project specifically benefits Oregon ratepayers

A robust enterprise data and analytics platform will facilitate rapid data extraction and better analytics to drive a data driven decision making process in how we provide service to our customers. This platform will also provide accurate and more timely reporting.

Please see NW Natural/600/Downing/Pages 4-5 for additional information regarding the Company's current IT&S environment and its over-arching IT&S strategic goal of undertaking efforts that specifically benefit Oregon customers.

Why the investment is necessary at this time:

NW Natural lags behind peers in its ability to analyze company data used to provide safe, reliable and adequate service to its customers. Data from a large number of applications currently are stored in a complex data environment that is difficult to access efficiently. The enterprise data and analytics platform that is being developed will improve access to this data and provide better visibility to key Company processes through improved analytics.

What other alternatives were considered:

The Tableau and SAS analytical environments were considered as well. Power BI and Azure are well supported complementary Microsoft products that are compatible with existing tools at NW Natural. There are three components to the cost:

1. The licensing costs for the software: Power BI is a Microsoft subscription that costs $9.99 per month per user. Tableau is $42 per month per user as a subscription. SAS is $8,000 per year for each licensed user.
2. Development costs: The engagement with Slalom is focused on development of the analytical environment and specific use cases for the business. This cost would be similar regardless of which analytical tool was chosen.
3. Cloud storage costs: This cost would be similar regardless of which analytical tool is chosen although Power BI and the Azure cloud service are optimized to work seamlessly together.

What would occur if the investment were not made:

If this investment were not made, analytics would remain at their current level and visibility to key Company processes would be hampered. The Company's ability to perform detailed ad hoc analyses to support data driven decision making would be limited.

b.iii. Composition Hardware and Software

Description of the project:

The Composition Software & Hardware Implementation project is comprised of 4 work streams:

(1) implement the selected composition software (legacy software/database)
(2) implement the outsourcing of print, insert, and mail function
(3) refresh of current customer documents (ie – bills, notices, etc.)
(4) work redesign and change management

How the project specifically benefits Oregon ratepayers

The current program code used to generate customer bills, notices and letters was developed twenty years ago and is code that is embedded in the CIS application. Core technology used by the CIS bill and notice production software, AFP (Advanced Function Printing) tools and functions, has been announced as unsupported. The loss of support for this key component of the bill and notice production introduces risk to NW Natural's ability to reliably produce printed output as currently integrated with the CIS system.

The replacement of NW Natural's primary interface with its customers, specifically bills and notices, will allow the Company to stabilize those functions, while continuing to operate on the Company's existing CIS back end infrastructure. The risk of direct

customer impact is reduced exponentially both with this project and with any future CIS replacement.

Moving to an outsourced print vendor for physical production of NW Natural's bills and notices allows us to reduce our Disaster Recovery (DR) risk and provides the most cost-effective solution.

Please see NW Natural/600/Downing/Pages 4-5 for additional information regarding the Company's current IT&S environment and its over-arching IT&S strategic goal of undertaking efforts that specifically benefit Oregon customers.

Why the investment is necessary at this time

The program currently used for bills, notices and letters is no longer supported. Also, significant capital costs would be required to replace the near end of life hardware for printing and inserting.

What other alternatives were considered

The Company considered purchasing composition software and *insource* print, insert and mail functions. This would include the purchase of a new color printer and refresh of existing inserter. See UG 388 OPUC DR 230 Attachment 1-1a *Comp HW SW Alternatives* and *bill print assessment* for more detail.

What would occur if the investment were not made

Software would be unsupported if the investment were not made, which poses risk to sending bills to customers. Also, high up-front capital expenditures and the potential risk to business interruption during transition of operations and a DR risk situation.

b.iv. Contact Center IVR Implementation

Description of the project

Replace the out-of-date Avaya IVR systems with an updated and more customer-friendly Genesys IVR system and replace the current Customer Contact Center (CCC) phone interface with the Genesys phone interface.

How the project specifically benefits Oregon ratepayers

An assessment of our unified communication solutions and architecture revealed the need to address our contact center and IVR solutions, which have not been updated to meet changing customer expectations and business needs. The limited functionality does not take advantage of new customer experience platforms like text messaging, web chat, and natural speech recognition – all components that vastly improve the self-service experience that our customers have grown to expect. Additionally, our CCC is a critical component of the organization and cannot experience system downtime at any

time, or at any location especially during emergencies and widespread outages. NW Natural needs to update the disaster recovery process and set up of systems.

Moving to a new system will modernize contact center and IVR functionality and processes. Implementing a new system will provide the opportunity to update the IVR to increase self-service and positive customer experiences, and allow NW Natural to have more control over the IVR solution than we currently do with Avaya and allow us to update content and functionality with greater frequency.

Please see NW Natural/600/Downing/Pages 4-5 for additional information regarding the Company's current IT&S environment and its over-arching IT&S strategic goal of undertaking efforts that specifically benefit Oregon customers.

Why the investment is necessary at this time

The existing end-of-life Avaya system will no longer meet our customers' needs and poses risk with an unsupported platform.

What other alternatives were considered

Upgrading the existing software. See UG 388 OPUC DR 230 Attachment 2- *Contact Center Alternatives* for more detail.

What would occur if the investment were not made

We would remain at risk with unsupported software.

b.v. and vi. – Desktop Virtualization Hardware and Software

Description of the project

Procure, deploy, configure and implement a virtual desktop solution to facilitate contract development teams, the NW Natural GIS team, and the NW Natural Business continuity teams to securely access NW Natural internal resources. This will be accomplished with the purchase of Dell VxRail hardware, and VMWare Horizon View Enterprise software, as well as leveraging external professional services to assist with the configuration, deployment, and testing to the NW Natural environment.

How the project specifically benefits Oregon ratepayers

A more secure, manageable provisioning of virtual computers ultimately provides efficient and timely resources for contractors and employees to perform their work to support, maintain and deploy applications serving our customers.

Please see NW Natural/600/Downing/Pages 4-5 for additional information regarding the Company's current IT&S environment and its over-arching IT&S strategic goal of undertaking efforts that specifically benefit Oregon customers.

Why the investment is necessary at this time

The investment is needed at this time so that employees and contractors can efficiently and timely meet project deadlines.

What other alternatives were considered

1) Microsoft Terminal Server; and 2) Current process. See UG 388 OPUC DR 230 Attachment 3 *Desktop Virtualization Alternatives* for more detail.

What would occur if the investment were not made

We would be unable to meet project demands, and it would limit our options of using certain contractors.

b.vii. Field and Web Mapping Implementation Phase 1

Description of the project

Implementation of a new field and web mapping solution to provide field and back-office workers with an easy-to-use geo operations hub, visualizing NW Natural operational assets. The solution will provide simplified access (via apps) to our geospatial and crew data which will ensure accuracy, safety and compliance.

How the project specifically benefits Oregon ratepayers

The project deliverables support a wide variety of NW Natural departmental functions and will support a diverse array of customers interests such as safety, emergency response, compliance, customer service, asset management, facilities management and vegetation management. Examples of some improvements for emergency response include:

- Ability to create customer and non-customer lists for automated work order generation.
- Mechanism to provide maps / apps to external entities in case of emergency
- Improve response to events involving complex buildings and campuses.

The project may be viewed as a technical replacement however the new solution will better support our customers by enabling NWN to eliminate paper processes, improve data handling and quality and augment geospatial capabilities.

Please see NW Natural/600/Downing/Pages 4-5 for additional information regarding the Company's current IT&S environment and its over-arching IT&S strategic goal of undertaking efforts that specifically benefit Oregon customers.

Why the investment is necessary at this time

The current system is at end of life.

GE has indicated that the current mapping products are at end of life (no further development will be provided). As a result, a new product implementation is necessary. Major project drivers include:

1. Long term, the support available from MapFrame for our version could decline in terms of quality as their developers become less familiar with the older version of application. We could be required to upgrade on an urgent basis because certain issues have been corrected in new versions but not in the old.
2. IT&S department has limited ability to support certain business needs due to lack of flexibility in the current version of the application especially for the field.
    a. New solution should include functionality that will create a platform to support our business needs for many years in the future.
    b. New solution positions NW Natural to have more mobile mapping integration options

What other alternatives were considered

Build a custom solution. See UG 388 OPUC DR 230 Attachment 4- *Field Mapping Alternatives* for more detail.

What would occur if the investment were not made

Customer safety is at risk if mapping inaccurate.

b.viii. Gas Control Room CRM HMI

Description of the project

The intent of this project is to continue upgrading Gas Control HMI's (human machine interface) to increase consistency and situational awareness of gas controllers as outlined in 49 CFR 192.631 and API 1165. This upgrade will include the increased capability and continuity for Gas Control during daily operations.

How the project specifically benefits Oregon ratepayers

The upgrade will increase standardization and reduce risk. Please see NW Natural/600/Downing/Pages 4-5 for additional information regarding the Company's current IT&S environment and its over-arching IT&S strategic goal of undertaking efforts that specifically benefit Oregon customers.

Why the investment is necessary at this time
Imminent regulatory requirement, and avoidance of legal risk.

What other alternatives were considered

The Company also considered replacing the SCADA system, but we decided to move forward with this project utilizing existing software to sustain the life of current SCADA system for another few years before kicking off the bigger effort.

What would occur if the investment were not made

If this investment were not made, there could be slower response times to pipeline events, as well as longer on boarding of new controllers due to lack of standard HMIs.

b.ix. Success Factors Recruiting Management Implementation

Description of the project

This project has implemented SAP SuccessFactors Recruiting Module.

How the project specifically benefits Oregon ratepayers
The lack of mobile capabilities, integrated correspondence, automated processes, workflow and the lack of a communication audit trail created a manual, fragmented, difficult and time-consuming recruiting process from end-to-end. The limited capabilities in the system impacted NW Natural's ability to attract talent, as it didn't meet candidate expectations. Significant manual processes resulted in inefficiencies and took recruiters away from sourcing qualified candidates. Below is a specific list of concerns that were addressed by this project:

- The candidate experience was not mobile friendly. Candidates could apply via internet but the process was manual.
- All correspondence with the candidates was done outside of recruiting system, creating an inconsistent audit trail.
- Recruiters had to post positions manually to over 7-12 sites for 1 job. All external postings were manual.
- Candidate review was a manual process. With potentially over 500 applicants each must be opened, reviewed and then processed. It was also very difficult to appropriately determine applicant disposition when they apply to multiple requisitions.
- Searching the candidate database for matches to new open requisitions was very difficult as well.
- Managers had no system access to see shortlist of candidates.

Please see NW Natural/600/Downing/Pages 4-5 for additional information regarding the Company's current IT&S environment and its over-arching IT&S strategic goal of undertaking efforts that specifically benefit Oregon customers.

Why the investment is necessary at this time

Implementation of this solution eliminated the need to recreate recruiting functionality on our new external website, which is currently being built under Digital Portal Project. If we had rebuilt the solution as is on our new website, it would have needed to be replaced as it does not resolve significant business pain points and relies on the SAP solution that is becoming obsolete.

What other alternatives were considered
Please see above.

What would occur if the investment were not made
Existing SAP recruiting solution stopped being enhanced by SAP in 2012 (no incremental improvements) and will eventually be phased out. Implementation of this solution eliminated the need to recreate recruiting functionality on our new external website which is currently being built under Digital Portal Project.

Response to C
The Data Center Migration and Modernization, both hardware and software, provide the server and network infrastructure that COM, the Digital Portal and Skype for Business use. COM provides customer data that was previously stored in CRMS and is used by the Digital Portal for user interactions (for example, Find a Contractor). Skype for Business is providing new telecommunications technology, which will be used by NW Natural personnel to support customers and maintain the software functionality of several other projects, including the Digital Portal and COM.

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Request No.: UG 388 OPUC DR 231

231. Regarding UG 388 DR 134 Attachment 1.xlsx and the following project,
a. Project:
i. Resource Center CNG Systems
b. Please provide a detailed narrative description for this project describing what is being purchased, how the project specifically benefits Oregon ratepayers, why the investment is necessary at this time, what other alternatives were considered, and what would occur if the investment is not made.

Response:

The Resource Center CNG Systems project is scoped for the installation of new CNG refueling infrastructure for Company fleet vehicles at several resource centers without CNG infrastructure, and the replacement of old CNG refueling equipment at resource centers where CNG infrastructure is outdated and insufficient. This project will enable the Company to utilize CNG fueled vehicles in more areas of our service territory.

The Company recently has learned that the CNG cargo vans manufactured by Ford that the Company anticipated purchasing will be discontinued. The Company is working to identify alternatives, including different mixes of alternative fuel types for its fleet and fuel conversion options for various types of fleet vehicles (e.g., cargo vans versus pickup trucks). This will impact the timing of our Resource Center CNG Systems projects, and we no longer expect these projects to be completed in the timing indicated in UG 388 DR 134 Attachment 1.

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Request No.: UG 388 OPUC DR 232

232. Regarding UG 388 DR 134 Attachment 1.xlsx and the following projects therein,
a. Projects:
i. Telemetry Locations – 2019
ii. Telemetry Locations - 2020
b. Please provide a detailed narrative description for each project describing what is being purchased, how the project specifically benefits Oregon ratepayers, why the investment is necessary at this time, what other alternatives were considered, and what would occur if the investment is not made.
c. Please provide a narrative description of how the projects interrelate to each other.

Response:

a and b. The Telemetry Locations – 2019 and Telemetry Locations - 2020 projects will install 15 pressure telemetry sites each of those years at various locations throughout the NW Natural pipeline system each year. Scope also includes improvement of existing infrastructure to communicate with these sites. During recent winters multiple locations throughout the pipeline system experienced low pressure. The Company's only notification of these low-pressure areas was via "no heat" calls from customers. These projects place pressure telemetry at sites to supplement existing pressure sensors, portable chart recorders and cold weather pressure read locations. The objective is to monitor the pressure in potential low-pressure areas so that low pressure areas can be identified by the Company and addressed prior to customers experiencing no heat.

Each telemetry site will install a pressure probe to monitor the system. Associated telemetry, power, and supervisory control and data acquisition (SCADA) equipment will also be installed at each site. Oregon rate payers will benefit from the additional pipeline pressure data collected from this project. This data will allow the Company to identify areas of low pressure before the pipeline becomes unable to supply firm customer demand. The additional pressure data will also allow the Company to meet the requirements of §192.741 Pressure Limiting and regulating stations: Telemetering or recording gauges, to monitor the system. The pipeline pressure data will also support the Integrated Resource Plan (IRP) assessment of proposed System Reinforcement projects.

In the 2018 IRP (LC 71), it was noted that the Company should use additional pipeline pressure readings of its system, and these Telemetry projects were initiated to meet that objective. For example, Staff stated on pages 11-15 of its Final Comments in LC 71:

> "Several issues arise in considering acknowledgment for the projects. The first is that data collection points are limited throughout NW Natural's system…. For example, NW Natural did not possess historical pressure data for several of the projects in the Action Plan…. Thus, Staff was unable to verify claims of historical low pressure conditions…. The matter of limited data was a point of confusion for Staff throughout the discovery process…. As it currently stands, the Company is relying on modeling software (Synergi) as a mechanism for demonstrating need. There are limited data points throughout the Company's system. As a matter of best practices, the Company must work to ensure that all modeling software be validated by data. Staff recognizes that system infrastructure challenges may exist, but this should not preclude the Company from collecting or verifying additional evidence to demonstrate a system need…. At the December 10, 2018 workshop, Staff inquired as to why alternatives to permanently installed SCADA systems weren't being utilized to verify Synergi's simulations at problematic locations. The Company indicated that it is moving away from more old-fashioned paper charts and employing the use of more sophisticated reading technology. Staff can understand that it may be difficult to install fully automated and integrated measurement equipment at key locations. However, the Company indicated that there were work-arounds under consideration, such as the use of cellular technology, and indicated that it was also interested in gathering additional data. The issue remains that Staff still has concerns about the lack of data verifying system need…. Staff's primary conclusion is that additional evidence of need is required to recommend substantive system reinforcement."

The Company to date has relied on the alternative to connected telemetry pressure sites to date with paper chart recorders and cold weather survey points. This alternative practice, however, was found by Staff to not produce an adequate amount of data for the 2018 IRP.

c. The Telemetry Locations – 2020 is very similar to the Telemetry Locations - 2019 project. Each project will install 15 pressure telemetry sites for a total of 30 systemwide.

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Request No.: UG 388 OPUC DR 233

233. Regarding UG 388 DR 134 Attachment 1.xlsx and the following project,
a. Project:
i. White Salmon
b. Please provide a detailed narrative description for this project describing what is being purchased, how the project specifically benefits Oregon ratepayers, why the investment is necessary at this time, what other alternatives were considered, and what would occur if the investment is not made.
c. Please state if this project is physically located in the state of Washington.

Response:

a. No data requested.

b. The White Salmon project is a system reinforcement project benefitting Washington customers. A portion of this project was inadvertently included in Oregon gross plant in this rate case and should be removed.

c. The project is located in the state of Washington.

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Request No.: UG 388 OPUC DR 234

234. Regarding UG 388 DR 134 Attachment 1.xlsx and the Lincoln City land purchase, please provide a copy of the escrow closing statement or land sale documents if the transfer occurred outside of escrow.

Response:

Please see UG 388 OPUC DR 234 Attachment 1.

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Request No.: UG 388 OPUC DR 235

235. Regarding UG 388 DR 133 NWN Attachment 1.xlsx and the Warrenton Resource Center land purchase, please provide a copy of the escrow closing statement or land sale documents if the transfer occurred outside of escrow.

Response:

Please see UG 388 OPUC DR 235 Attachments 1 and 2 for the purchase and sale agreement and escrow documents.

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Request No.: UG 388 OPUC DR 236

236. Regarding UG 388 DR 134 Attachment 1.xlsx and HQ – The Move Project $35,940,510,

a. Please provide transaction level detail including dates, account coding, vendor names, and line item descriptions sufficient for Staff to understand what was purchased.

b. Please provide an analysis of all project loadings including construction overhead, AFUDC, etc.

c. Please provide a reconciliation to the $32.7 million capital cost figure in testimony (Pipes, 500/42).

Response:

a. The following attachments provide the transaction level detail for The Move Project leasehold improvements as well as furniture, fixtures, equipment, structures:

UG 388 OPUC DR 236 Attachment 1 represents the January 2020 invoice from Turner Construction Company to NW Natural for The Move Project capital costs at January 31, 2020. This attachment contains a breakdown of leasehold costs associated with Turner for the period and to-date by materials and services description, subcontractor (vendor), percentage complete, and balance to finish.

UG 388 OPUC DR 236 Attachment 2 represents the January 2020 invoice from GBD Architects Inc. to NW Natural for professional services associated with The Move Project, dated January 24, 2020. This attachment contains a breakdown of leasehold costs associated with GBD for the period and to-date by services description, percentage complete, and balance to finish.

UG 388 OPUC DR 236 Attachment 3[1] represents invoices from the Company's landlord as of invoice date, Third and Taylor Office Owner, LLC, for costs associated with leasehold improvement change order costs. Please also reference "UG 388 CUB DR 21 Attachment 1" for an additional invoice between the Company and the

[1] The commercially sensitive wire routing information on page 18 of Attachment 3 has been redacted for security purposes.

landlord for leasehold costs also associated with leasehold improvement change order costs.

UG 388 OPUC DR 236 Attachment 4 represents the Scope of Work between the Company and Corporate Environments of Oregon Inc. It contains the description, cost, and quantity of furnishings, fixtures, and equipment purchased for The Move Project.

UG 388 OPUC DR 236 Attachment 5 represents invoices from various vendors for audio-visual equipment purchases and professional services tied to The Move Project.

UG 388 OPUC DR 236 Attachment 6 represents three separate sales invoices from ErgoGenesis for replacement of workstation chairs.

"UG 388 OPUC DR 236 Attachment 7" represents invoices from various vendors for design and engineering services related to building security, as well as miscellaneous testing and commissioning services.

Please note that the invoices referenced above do not contain Company account coding; consistent with industry standard, the total of each vendor invoice is recorded in the Company's accounting systems but not the individual transaction level detail.

Please note also that the costs presented in the documents listed above are gross of the Company's negotiated tenant improvement allowance with the landlord, proceeds from half the net gain on sale of the Truck Lot, as well as the items the Company has removed from the rate case prior to filing, as described in NW Natural/500/Pipes/Page 44/Lines 12-17.

Finally, please note that the attachments represent the Company's best efforts to provide all project purchases and professional services expenses for The Move Project. There are approximately $190 thousand of miscellaneous expenses that are not included in the attachments. Because the project is on-going, the Company also expects to incur additional future expenses that will be reflected in future invoices. The Company will supplement this response to reflect any such additional invoices and the referenced miscellaneous expenses.

b. Please refer to UG 388 OPUC DR 127 and DR 128 responses and attachments for a description and derivation of AFUDC. As noted in the OPUC DR 127 response, "NW Natural calculates the AFUDC entry using an automated program within the general ledger system that produces thousands of line items each month." Property taxes are loaded onto the project costs similarly. Construction overhead (COH) is loaded based on the procedure described by the Company on pages 218-1 and 218-a of its annual FERC Form 2 filing. Please refer to, "UG 388 OPUC DR 236 Attachment 8" for these pages from the Company's latest filing. The COH rate for

The Move Project is eight percent for leasehold improvements booked to FERC Account 186.

c. The $32.7 million capital cost figure at Pipes 500/42 did not include project loadings costs for COH, AFUDC, and property taxes. The table below reconciles the rate case filing amount of $32.7 million to the $35,940,510 by FERC Account as presented in "UG 388 OPUC DR 134 Attachment 1."

Category	FERC 186	FERC 390	Total	Reference
Capital Expenses	$24,344,734	$8,335,533	$32,680,267	Pipes 500/42
COH	$1,947,579	$549,993	$2,497,572	
AFUDC	$186,075	$165,286	$351,361	
Property Taxes	$336,309	$75,001	$411,311	
Total	$26,814,697	$9,125,814	$35,940,511	OPUC DR 134

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Request No.: UG 388 OPUC DR 237

237. Regarding UG 388 DR 133 NWN Attachment 1.xlsx and the Sherwood Seismic Detailing project,

a. Please provide a narrative description of why this project was necessary and why the work was not accomplished when the Sherwood facility was built.

Response:

NW Natural purchased the Sherwood Operations Center (originally constructed in 1986) in 2012, when the State was just starting to focus on the risk of a Cascadia Subduction Zone earthquake and its potential impacts to Oregon utilities. The 2019 Sherwood Seismic Detailing Project was necessary to ensure all mechanical electrical and plumbing (MEP) systems would remain functional after a significant seismic event, consistent with the Oregon Resiliency Plan recommendations for critical energy infrastructure.

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Request No.: UG 388 OPUC DR 238

238. Regarding UG 388 DR 133 NWN Attachment 1.xlsx and the Eagle Wireless Upgrade project,

a. Please provide a detailed narrative description for this project describing what is being purchased, how the project specifically benefits Oregon ratepayers, why the investment is necessary at this time, what other alternatives were considered, and what would occur if the investment is not made.

Response:

Description of the project

This project converted 600 Eagle Advance Automated Meter Reading (AAMR) devices from legacy analog phone lines to wireless technology (cellular or satellite).

How the project specifically benefits Oregon ratepayers

The upgrade was necessary due to an FCC ruling that allowed telecommunications providers to eliminate analog phone lines and transition to digital technology. Without this upgrade, the AAMR devices would suffer severe data impairment and ultimately stop functioning after the telecommunication providers switch to a digital infrastructure.

Why the investment is necessary at this time

The FCC ruling took effect in 2017 and the telecommunications providers began the process of upgrading their legacy equipment. The Eagle AAMR devices are used to transmit hourly interval data for large commercial/industrial customers and are required by tariff for specific rate schedules and billing options. The upgrade allowed us to continue to provide these services to our customers with minimal interruptions.

What other alternatives were considered

Please see the attached alternatives analysis, UG 388 OPUC DR 238 Attachment 1.

What would occur if the investment were not made

Without this upgrade, our Eagle AAMR devices would experience severe data impairment and ultimately stop functioning after local telecommunications providers switched to a digital solution. We would not be able to provide customers with daily interval information, causing significant customer complaints and potential regulatory and legal risks. Additionally, we would be unable to bill our largest commercial and industrial customers (accounting for about 50% of Company gas send-out).

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Request No.: UG 388 OPUC DR 239

239. Regarding UG 388 DR 135 Attachment 1.xlsx,

a. Please provide a narrative explanation of the difference between public works projects and relocates including how the projects are initiated and the Company's legal responsibilities.

b. Regarding monthly expenditures in the following groupings and FERC Accounts,

i. Expenditures:

1. October 2019
   a. Information Technology – Account 391.2 $1,322,131
   b. Information Technology – Account 397.2 $6,081,230
2. December 2019
   a. Information Technology – Account 303.1 $2,138,089
   b. Information Technology – Account 391.2 $1,596,016
3. April 2020
   a. Public Works – Account 367 $3,332,085
   b. Public Works – Account 376.11 $6,997,379
   c. Public Works – Account 376.12 $6,330,962
4. June 2020
   a. Information Technology – Account 303.1 $1,766,240
5. September 2020
   a. Information Technology – Account 303.1 $1,529,207
6. December 2020
   a. Information Technology – Account 303.1 $5,985,470

ii. Please provide a detailed narrative description what is being purchased, how the purchases specifically benefits Oregon ratepayers, why the investment is necessary at this time, what other alternatives were considered, and what would occur if the investment is not made.

iii. Please confirm that the expenditures in each month are not duplicative of amounts included in the list of discrete capital investments (UG 388 DR 134 Attachment 1.xlsx).

Response:

a. Public works projects are created as a result of notifications from jurisdictional agencies that our natural gas facilities are in conflict with agency improvements and that we are obligated by our franchise agreements, local ordinances and

permits by which we occupy public rights-of-way to relocate our gas facilities at no cost to the public agency.

Relocation projects are a result of customer requested relocations or company initiated relocates as a result of requirements related to compliance, quality assurance mitigation, corrosion or the underground piping installed with district regulator replacements.

b.

1. Please see OPUC DR 239 Attachment 1.

2. Please see OPUC DR 239 Attachment 1.

3. See OPUC DR 239 Attachment 2 for breakdown of costs by grouping and FERC account. The bulk of the costs are for the OR 212 257th to US 26 ODOT Project. The remainder of the costs are for smaller projects related to Public Works.

   Please refer to NW Natural/400/Karney/Pages 41-42 and the Company's response to UG 388 OPUC DR 137 for a description of the project and a discussion of the benefits, necessity, and alternatives evaluated for this project. If the investment was not made, the Company would no longer have a high-pressure pipeline feed to Sandy, and would be unable to serve firm customers.

   The Blanket Project Applicant 114 projects represent smaller and, in most cases, yet to be identified public works projects that are created as a result of notifications from jurisdictional agencies that our natural gas facilities are in conflict with agency improvements and that we are obligated by our franchise agreements, local ordinances and permits by which we occupy public rights-of-way to relocate our gas facilities at no cost to the public agency. The costs will consist primarily of the installation of new pipe that will not conflict with the jurisdictional agency's project. These projects replace pipelines that will be removed as part of the jurisdictional project, allowing NW Natural to continue to serve its customers. Not performing the project would eliminate gas service to current customers. Before each project, NW Natural works with jurisdictional agencies to minimize the impact to the Company's facilities and service to its customers.

4. Please see OPUC DR 239 Attachment1.

5. Please see OPUC DR 239 Attachment 1.

6. Please see OPUC DR 239 Attachment 1.

iii. These costs are not duplicative of the amounts included in the list of discrete capital investments (UG 388 DR 134 Attachment 1.xlsx).

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Request No.: UG 388 OPUC DR 240

240. Regarding the Company's response to DR 138a, items i through xi,
a. Please identify the month each item was added or is projected to be added to rate base including the FERC account(s).
b. Please provide a narrative explanation of why the seismic and underground storage assessments are being capitalized.

Response:

a. For each project discussed in DR 138a, items I through xi, the month and FERC account(s) are as follows:

i. Seismic Assessment - This item was placed in service in January 2020. This is TIMP – Allocated to:
    i. 367 Mains – 92%
    ii. 376.11 Mains < 4" – 5%
    iii. 376.12 Mains 4" & > – 3%

ii. Underground Storage Assessments costs for 2020 and 2021 are included in UG 388 OPUC DR 134 Attachment 1 (rows 100-105, labeled as Mist Well Rework 2020 and Mist Well Rework 2021).
Mist Well Rework 2020 – This item is expected to be placed in service in October 2020.
Mist Well Rework 2021 – This item is expected to be placed in service in October 2021.
This is Mist Betterments – 11 – Allocated to:
    i. 363.11 Liquefaction Equip. - Linn – 60%
    ii. 376.11 Mains < 4" – 40%

iii. EFV retrofit pilot program - This spend will go in-service along the way as it is spent. Applicant 120 - DIMP % to close rate is 50%, so the spend will close 50% in the month spent and 50% the following month. This is DIMP – Allocated to:
    i. 376.11 Mains < 4" – 40%
    ii. 376.12 Mains 4" & > – 60%

The remaining projects presented in NW Natural's 2019 Safety Project Plan and associated costs included in rate base are:

iv. Eugene Transmission ILI - This item is expected to be placed in service in April 2021. This is TIMP – Allocated to:
    i. 367 Mains – 92%
    ii. 376.11 Mains < 4" – 5%
    iii. 376.12 Mains 4" & > – 3%

v. Springfield Transmission ILI – This item is expected to be placed in service in October 2020. This is TIMP – Allocated to:
    i. 367 Mains – 92%
    ii. 376.11 Mains < 4" – 5%
    iii. 376.12 Mains 4" & > – 3%

vi. South Eugene Transmission ILI – This item is expected to be placed in service in December 2020. This is TIMP – Allocated to:
    i. 367 Mains – 92%
    ii. 376.11 Mains < 4" – 5%
    iii. 376.12 Mains 4" & > – 3%

vii. Pipeline Replacement due to Natural Forces –This project is forecasted from May – September 2020, and will be fully in-service by November 2020. It will go in-service as spent. This is TIMP – Allocated to:
    i. 367 Mains – 92%
    ii. 376.11 Mains < 4" – 5%
    iii. 376.12 Mains 4" & > – 3%

viii. Vintage Plastic –This spend will go in-service along the way as it is spent. Applicant 120 - DIMP % to close rate is 50%, so the spend will close 50% in the month spent and 50% the following month. This is 320 – DIMP Services, allocated to FERC 380 Services at 100%.

ix. Meter Protection Installation – This spend will go in-service along the way as it is spent. Applicant 120 - DIMP % to close rate is 50%, so the spend will close 50% in the month spent and 50% the following month. This is DIMP – Allocated to:
    i. 376.11 Mains < 4" – 40%
    ii. 376.12 Mains 4" & > – 60%

x. Pipeline Modifications due to ROW Encroachment – These are multiple projects, some of the larger projects being Division St Trailer park – (placed in service in February 2019), Glenwood Trailer Park (placed in service in October 2019), and Highland view Mobile home park Corvallis – (placed in service in November 2019). This is DIMP – Allocated to:
    i. 376.11 Mains < 4" – 40%

ii. 376.12 Mains 4” & > – 60%

xi. ASV/RCV installations – This spend will go in-service along the way as it is spent. Applicant 112 - TIMP % to close rate is 33%, so the spend will close 33% in the month spent and 33% each in the following 2 months. This is TIMP – Allocated to:

i. 367 Mains – 92%
ii. 376.11 Mains < 4” – 5%
iii. 376.12 Mains 4” & > – 3%

b. The Mist Well Rework project work completed in 2019 included the replacement of major downhole components of the underground infrastructure in a number of our storage reservoirs at Mist. The work included replacement of the primary well barrier elements between the storage reservoir and external environment: production tubing strings, production packers, and Christmas tree master valves. Capital replacement of similar components will occur in each year of the Mist well integrity program.

In general, we perform seismic studies to ensure that we meet new construction standards so that our facilities remain safe and reliable. Because these assessments are part of the overall construction plan, they are charged to the project. This accounting treatment is consistent with our historical practice and our accounting policy to capitalize these costs when they lead to capital improvements. If as a result of this study we had determined that no additional work was necessary, we would have charged this to O&M.

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Request No.: UG 388 OPUC DR 241

241. Regarding the Company's response to DR 138b,
a. Please provide the O&M pipeline integrity costs by FERC account for the base year and calendar years 2014-2018.

Response:

Please see "UG 388 OPUC DR 241 – Attachment 1" for O&M pipeline integrity costs by FERC account for the base year and calendar years 2014-2018. We have used the UG 388 allocation factors for all years for consistency.

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Request No.: UG 388 OPUC DR 242

242. Regarding the Company's response to DR 138c,

a. Please provide a narrative explanation why the Mist well rework costs in the Company's response to DR 134 are $7.328 million. (Staff notes this is 244% of 3.0 million).

b. Regarding item vii, please disaggregate the projects included in the 2.2 million figure. Specifically,

i. Natural Forces
ii. Vintage Plastic
iii. Meter Protection Installation
iv. Pipeline Modifications due to ROW Encroachment
v. ASV/RCV installations
vi. Please provide a narrative explanation of why the amounts included in rate base (DR 138a, items vii through xi) for these projects is $7.464 million compared to $2.2 million in the 2019 Safety Project Plan. (Staff notes this is 339% of $2.2 million).

Response:

a. The 2020 estimate and 2021 estimate for underground storage well integrity is $3.0M (without Construction Overhead) for each year. With Construction Overhead, these amounts are approximately $3.7M in 2020 and $3.7M in 2021. This can be found in NW Natural/400, Page 47, line 4. The $7.328M in DR 134 is the total amount placed in-service for both 2020 and 2021.

b. The disaggregate of the $2.2 million stated in the SPP is as follows:

- Natural Forces - $400,000
- Vintage Plastic - $750,000
- Meter Protection Installation - $300,000
- Pipeline Modifications due to ROW Encroachment - $250,000
- ASV/RCV Installation - $500,000

Based on risk and identified issues, the exact spend within those buckets can vary year to year, and is not determined until after the SPP is filed. The costs in the SPP

only represent expected 2020 calendar year spend at the time of filing and do not include construction overhead.

The costs included in UG 388 OPUC DR 138(a) are for two years, through the Test Year, and include construction overhead.

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Request No.: UG 388 OPUC DR 243

243. Please provide the October 31, 2020 rate base by FERC account in the same format as UG 388 DR 113 Attachment 9.xlsx, LRIC Plant Functionalization, cells A5:D116.

Response:

Please see "UG 388 OPUC DR 243 Attachment 1" for the 13 month AMA as of October 31, 2020 as well as the October 31, 2020 ending balance. We have compiled this attachment consistent with UG 388 DR 113 Attachment 9.

UG 388 DR 113 Attachment 9 functionalizes the revenue requirement for use in the long-run incremental cost study, as stated in the Company's response to UG 388 SDR 113, but is ***not*** used to compile the Company's revenue requirement for this rate case.

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Request No.: UG 388 OPUC DR 244

244. Regarding the Company's response to data request 137c and 137d,

a. Please indicate if the Company was required by ODOT to conduct utility test-hole excavations pertaining to the Sandy feeder line. If so, please indicate the year and month each excavation occurred and the project milepost where the excavation occurred (range .30 through 8.19).

b. Please provide copies of the following documents received, if any, from ODOT and the date each was received by the Company.

i. Utility conflict letters
ii. Utility certifications
iii. Utility specifications

c. Please indicate if the existing 3" pipeline from Ritchey Rd. to U.S. 26 is still in service and provide a narrative description of any relocation work to this existing pipe that was required to accommodate the ODOT project.

d. Regarding UG 388 DR 137 Attachment 10.pdf and the statement on page 2 that "the expected average cost per foot/mile for the entire alignment to Sandy (8 mile) would result in a lower cost to the rate payers."

i. Please provide the calculations proving this result.

e. Staff notes that Richey Rd. also crosses Deep creek. Please provide a narrative explanation of how this crossing was accomplished compared to the Hwy 212 crossing which was avoided by rerouting the project.

Response:

a. NW Natural was not required by ODOT to conduct utility test-hole excavations pertaining to the Sandy Feeder line. ODOT issued construction plans and identified potential conflicts, and required NW Natural to determine if there was a conflict and propose a method of conflict mitigation should a conflict exist.

To assess potential utility conflicts, NW Natural is often requested, and typically performs, utility pothole vacuum excavations in situations when underground utilities are proposed for construction and/or when excavations are to occur over the top of a natural gas pipe. In this particular case, between Richey Road and OR 26, the majority of the potential conflicts was due to surficial paving and ADA ramps, where the conflicts already were known to be gas valves and utility boxes with wires for locating and cathodic protection monitoring. There was a known conflict that did not require utility potholing at the Deep Creek bridge crossing.

This conflict was known without potholing due to the proposed subsurface construction activities, such as the creek channel over excavation of 3-5 feet in depth, bridge pile cap excavation and bridge pile driving.

Geotechnical exploratory borings were performed by NW Natural's geotechnical consultant on both sides of Deep Creek (ODOT M.P. 7.95) on April 12 and 13, 2018 to assist with the development of a potential design to install a gas main under Deep Creek via horizontal directional drilling (HDD) technology.

b. NW Natural received notification letters, utility conflict letters, and utility coordination letters pertaining to our gas facilities in the OR 212 right-of-way.

i. Utility conflict letters were received from ODOT on the following dates:

Please refer to **UG 388 DR 244 Attachment 1** for notice of an upcoming project and potential utility conflicts letter dated September, 27, 2017.

Please refer to **UG 388 DR 244 Attachment 2** for List of (Potential) Utility Conflicts spreadsheet dated December, 2017.

Please refer to **UG 388 DR 244 Attachment 3** for Conflict Letter with Non-Reimbursable Work dated January 11, 2018.

Please refer to **UG 388 DR 244 Attachment 4** for Conflict Letter with Non-Reimbursable Work dated April 13, 2018.

Please refer to **UG 388 DR 244 Attachment 5** for Revised Conflict Letter with Non-Reimbursable Work dated December 5, 2018.

Please refer to **UG 388 DR 244 Attachment 6** for List of (Potential) Utility Conflicts spreadsheet dated December 5, 2018.

Please refer to **UG 388 DR 244 Attachment 7** for Group Utility Coordination Meeting Minutes dated December, 19, 2018.

Please refer to **UG 388 DR 244 Attachment 8** for NW Natural Utility Coordination Meeting Agenda dated April 3, 2019.

Please refer to **UG 388 DR 244 Attachment 9** for Relocation Time Requirements dated May 8, 2019.

ii. There were no utility certifications issued by ODOT to NW Natural.

iii. Utility specifications for the final completion dates for relocation of any natural gas facilities in conflict with ODOT's upcoming OR 212 road improvements are stated in **UG 388 DR 244 Attachment 9**.

All utility work within ODOT's right-of-way was required to conform to the approved construction plans and the ODOT ROW Permit. Please refer to **UG 388 DR 244 Attachment 10** for the ODOT ROW permit issued on April 18, 2019

by ODOT to NW Natural for our work within the OR 212 right-of-way. The plans and the permit reference ODOT specifications.

Utility specifications for construction were not issued by ODOT as they already exist on file with ODOT. All work in ODOT rights-of-way must conform to the 2018 Oregon Standard Specifications at the link on ODOT's website below:

https://www.oregon.gov/odot/Business/Pages/Standard_Specifications.aspx

c. Between Richey Road and US 26 the length of the existing 3" pipeline along OR 212 is approximately 1.6 miles (8,500 feet). District regulators deliver gas into the Class B system at a location approximately 1,600 feet west of the OR212 / Ritchey Road intersection and at a location approximately 1,200 feet west of the centerline of US 26, and east of the proposed ODOT Deep Creek bridge crossing.

Approximately 1,100 feet of the existing 3" pipeline remains in services to supply gas to the existing district regulator located between US 26 and the Deep Creek crossing of OR 212.

The remaining 7,400 feet of existing 3" pipeline between Ritchey Road and US 26 will be taken out of service before March 30, 2020. The replacement 8-inch pipeline needed to be constructed and placed into service before this section of pipeline could be removed from service.

As of February 28, 2020, the entire length of the existing 3" pipeline still is in service.

d. The statement made on page 2 of the document in UG 388 DR 137 Attachment 10 was based on the following estimates (which did not include construction overhead at the time the estimates were made) of the two pipeline routes:

OR Hwy 212 to US 26 to Sandy (as proposed in IRP)	
Public Works Estimate for 3 miles of pipe	$11-14.2 million
System Reinforcement estimate for 5 miles of pipe	$15.2-21.1 million
Combined total	$26.2-35.3 million
Per mile average	$3.3-4.4 million/mile

OR Hwy 212 to Ritchey Road to Kelso Road to US 26 to Sandy (as designed)	
Public Works Estimate for 5 miles of pipe	$12.8-16.2 million
System Reinforcement estimate for 3 miles of pipe	$10.6-14.8 million
Combined total	$23.4-31.2 million

Per mile average	$2.9-3.9 million/mile

The revised route has a lower estimated total cost and per mile cost than the project as submitted in the IRP.

e. NW Natural avoided crossing underneath Deep Creek on Ritchey Road by crossing over the top of an existing concrete box culvert structure within the roadway fill embankment zone supported by the culvert structure. Please refer to **UG 388 DR 244 Attachment No. 11** for a plan and profile view of Deep Creek with the existing concrete box culvert structure and the location of the proposed 8-inch gas main within the existing fill embankment zone above the top of the concrete box culvert.

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Request No.: UG 388 OPUC DR 245

245. Regarding rerouting of the Hood River and South Oregon City projects, please provide a narrative explanation of how the design change is expected impact future growth and system expansion potential in each area. In other words, will additional reinforcement be required sooner than if the projects had been built as contemplated in the IRP?

a. Please provide any relevant internal studies or analyses conducted by the Company.

Response:

Hood River Reinforcement Project

The decision to change the location of the Hood River project will not lead to a need to construct additional reinforcement sooner than if the project originally contemplated in the IRP had been built.

The design change was based upon consideration of several factors:

1. The design change to a northern route brings more gas to the core of the Hood River load center and the City's urban growth boundary and more efficiently uses the existing Class B distribution piping network.

   The terminus for the northern route occurs in a location more central to the load center for the City of Hood River. As shown in Figure 5 Karney/Page 16, the proposed high pressure 4-inch steel pipeline terminates in a location where the concentration of natural gas customers is greater. Figure 5 shows pressures in the distribution system at the southern end of Hood River of 41 psig, which is an indication of a strong system with adequate potential for additional customers.

   The Hood River load center consists of commercial and industrial lands closer to the north City limits, as well as residential lands and commercial and institutional lands within the remainder of City limits and the City urban growth boundary. Between the City urban growth boundary and surrounding agricultural orchard lands are rural residential (Hood River County) land owners on larger land parcels, leading to a lower density of gas customers. Beyond the rural

residential land owners are agricultural orchard lands that have historically shown a lower demand for gas usage.

The northern pipeline route terminates near the 18th Street and Taylor Street intersection. South of the 18th Street and May Street intersection, the Class B distribution system consists of a network of fairly well connected 4-inch gas mains that can efficiently deliver gas back north to the City commercial and industrial districts as well as to the east, south and west to the perimeter of the urban growth boundary and out into the rural residential areas on the perimeter of the Hood River load center.

The terminus of the northern pipeline route supplies natural gas to a location where distribution can occur in four directions away from the pipeline terminus. The terminus of the southern pipeline route would have delivered gas to the southern edge of the Hood River load center, where natural gas would have flowed along a single path before working its way north into the southern perimeter of the Class B distribution network.

Should the concentration of gas users increase along the edge of the City urban growth boundary, the existing Class B distribution system will adequately supply gas to the gas customers.

2. The capacity of the northern route is greater than the southern route contemplated in the IRP.

The original southern route as contemplated in the IRP would have brought a 2.2-mile-high pressure pipeline from the existing 8-mile long Odell Feeder to the edge of the Hood River load center. The gas would have flowed thru over 10 miles of high-pressure pipeline before reaching the edge of the Hood River load center. The new northern route as contemplated will add a 0.6-mile pipeline onto the existing 0.6-mile-long high-pressure pipeline supplying gas to the core of the Hood River load center.

The capacity of the 1.2 miles of high-pressure pipeline northern route is over 20% greater than the capacity of the 10 miles southern route due to the shorter length. The location of the terminus of the northern route also allows for efficient, shorter high-pressure pipeline expansion in the event that growth exceeds the current expectations.

a) The analysis shown in the Synergi pressure maps for each of the potential routes (Figure 4, Karney 14, and Figure 5, Karney 16) demonstrate that both solutions address the current pressure issues within Hood River. The majority of the ongoing development within the Hood River area is residential and limited to the area within the urban growth boundary. The selected northern pipeline route will be adequate to supply future growth, as would have the southern route proposed in the IRP. Additionally, as mentioned in testimony the northern route is 6,000 feet shorter and “believed to the most cost

effective due to its shorter length and the expectation of less bedrock and large boulders excavation" (Karney 15).

South Oregon City Reinforcement Project

The decision to change the location of the South Oregon City project will not lead to a need to construct additional reinforcement sooner than if the project originally contemplated in the IRP had been built.

The terminus for the revised pipeline route near the Myers Road/Leland Road intersection is within 0.6 miles of the location of the McCord Road/Leland Road intersection originally contemplated in the IRP, and both termini supply natural gas into the Class B distribution system equally well.

a) The analysis shown in the Synergi pressure maps for each of the potential routes (Figure 7, Karney 21, and Figure 8, Karney 23) demonstrate that both solutions address the current pressure issues in Oregon City equally well.

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Request No.: UG 388 OPUC DR 246

246. Regarding the Company's response to data request 137f(i), please indicate when the Burns and McDonnell final design and cost review is expected to be completed.

Response:

The final design and cost review for the Mist Large Dehydration System Project is expected to be completed in early March 2020. The Company will supplement its response to UG 388 OPUC DR 137f(i) once that review is complete.

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Request No.: UG 388 OPUC DR 247

247. Regarding the alternatives analysis for the Sandy Feeder Project (NW Natural/400, Karney/7),

a. Please provide a detailed analysis showing that the satellite LNG facility is still uneconomical given the increase in the combined project cost for the two projects (Sandy Feeder $14.9 million + Oregon 212 257th to US 26 ODOT Project $15.3 million = $30.2 million).

Response:

A satellite LNG facility is not a viable alternative for the two combined projects. The public works portion, Oregon 212 257th to US 26 ODOT Project, initially required the sole high-pressure pipeline feed into Sandy to be relocated by January 28, 2019, per UG 388 OPUC DR 137 Attachment 11. This date has subsequently been moved to April 30, 2020. A satellite LNG cannot be designed, sited, permitted, and constructed in the timeframe offered with the notice given by this public works project. Additionally, once the sole high-pressure pipeline feed into Sandy is removed for the public works project, the satellite LNG facility would become the primary natural gas source for customers in Sandy. This use differs greatly from the peak day satellite LNG analyzed in the Alternatives Analysis for the Sandy Feeder Reinforcement Project. NW Natural would be unable to supply service to firm customers between the time the pipeline conflict was removed from service until the satellite LNG was constructed.

Given that a satellite LNG is not a viable solution for the public works portion of the combined pipeline project, the requested detailed analysis comparing satellite LNG to the combined pipeline projects would not be productive.

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Request No.: UG 388 OPUC DR 353

353. Regarding the Company's response to Staff data request 208,
a. Please provide the inception to date cost of project number 201828.

Response:

As of 1/31/2020, the inception to date cost of project 201828 (City of Portland Interconnect and Injection Site) is $201,823, net of a $778,850 contribution from the City of Portland.

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Request No.: UG 388 OPUC DR 354

354. Regarding the accumulated depreciation RWIP adjustments embedded in UG 388 DR 113 Attachment 9.xlsx and UG 388 DR 243 Attachment 1.xlsx ($39,354,414),

a. Please provide a detailed narrative explanation of the rationale underlying this adjustment including relevant prior Commission orders and/or testimony in previous rate cases.

b. Please explain the purpose of multiplying the gross adjustment by a factor of .95 as included in the cell formulae.

c. Please provide a summary of the RWIP adjustment included in the previous three rate cases (UG 152, UG 221, and UG 344) including the gross amount, net of adjustment, and percentages allocated to system mains and meters/services.

d. Please identify the worksheets and cells where the RWIP adjustment appears in UG 388 - Exh. 1000 - WP2 - Gross Plant, Accum Deprec and Deprec Exp - CONFIDENTIAL.xlsx.

Supplemental Response:

It has recently come to our attention that the Company's 2010 originally submitted Earnings Test was found to have errors in July 2011. The RWIP adjustment was one of the errors identified by the Company. RWIP was discussed with the Parties and all agreed that it should be included within the rate base calculation. [1] The Company re-filed the Earnings Test on July 22nd, 2011 including RWIP. Please see "UG 388 OPUC DR 354 Supplemental Attachment 1" "Reconciliation" tab, for a workpaper that reconciles the difference between rate base on our original Earnings Test filing and the re-filed version from July 22nd. Also included in the attachment is the summary page for each Earnings test submitted on the "April 29th Filing" and "July 22nd Filing" tabs.

Original Response:

a. RWIP is short for Removal Work in Progress (GL 108001), though it actually represents the amount of removal cost incurred to date related to the retirement of assets. The inclusion of the amount should not be considered an "adjustment," but

[1] UM 903, Staff's Opening Comments filed July 27th, 2011, pages 7&8; UM 903, NW Natural's Opening Comments filed July 27th, 2011, page 5.

rather a necessary addition of a component of the accumulated depreciation reserve to accurately produce net plant in rate base. The presentation of gross plant and the accumulated reserve in the workpapers is done by FERC account, to allow for more granular consideration of utility plant and the related reserve. The RWIP account, however, is not classified by FERC account, but because it is typically related to distribution plant, it is included in the distribution plant category of the reserve.

Although there has been no specific discussion of RWIP in our recent testimony, the RWIP account has been included as a component of accumulated depreciation in the Company's rate case workpapers in the last two rate cases (UG 221 and UG 344) In addition, the RWIP balance has been included in rate base in our annual RG 40 filing since at least 2011. It appears that the separate accounting of cost of removal amounts apart from the FERC account presentation was not in use in 2001, which was the basis of the UG 152 rate case.

b. The purpose of multiplying the amount by .95 is to derive the Oregon portion of the System RWIP balance. This allocation factor was derived from the most recently filed FERC FORM 2 in RG 37 (2018 FORM 2).

c. Please see "UG 388 OPUC DR 354 Attachment 1."

d. See cells AN175:BX175 on tab labelled "Rate Base Net Plant" in work paper "UG 388 – Exh. 1000 – WP2 – Gross Plant, Accum Deprec and Deprec Exp-CONFIDENTIAL.xlsx."

CASE: UG 388
WITNESS: BRIAN FJELDHEIM

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 300

Opening Testimony

April 17, 2020

Q. Please state your name, occupation, and business address.

A. My name is Brian Fjeldheim. I am a Senior Financial Analyst employed in the Energy Rates, Finance, and Audit Division of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE, Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. My witness qualification statement is found in Exhibit Staff/301

Q. What is the purpose of your testimony?

A. I present Staff's analysis and recommendations regarding the rate treatment of gas storage in rate base, underground storage operating expense, other gas supply expense and purchased gas expense, IT projects, taxes (excluding income taxes), prepaid expenses, and insurance and risk.

Q. Did you prepare an exhibit for this docket?

A. Yes. I prepared the following exhibits:

Staff/301	Witness Qualification Statement
Staff/302	Gas Storage in Rate Base – Associated NW Natural workpaper and responses to Staff Data Requests.
Staff/303	Gas Storage Operating Expense – Associated NW Natural workpaper and responses to Staff Data Requests.
Staff/304	Other Gas Expense and Purchased Gas Expense – Associated NW Natural workpaper and responses to Staff Data Requests.
Staff/305	IT Projects – Associated NW Natural workpaper and responses to Staff Data Requests.
Staff/306	Other Taxes (excluding income taxes) – Associated NW Natural workpaper and responses to Staff Data Requests.

Staff/307 Insurance and Risks – Associated NW Natural workpaper and responses to Staff Data Requests.

Staff/308 Accounting Records – NW Natural responses to Staff Data Requests.

Q. How is your testimony organized?

A. My testimony is organized as follows:

Issue 1. Gas Storage in Rate Base 3
Issue 2. Gas Storage Operating Expense 7
Issue 3. Other Gas Expense and Purchased Gas Expense 11
Issue 4. IT Projects 13
Issue 5. Taxes Other Than Income 22
Issue 6. Insurance and Risks 28
Issue 7. Prepaid Expenses 33
Issue 8. Accounting Records 34

Q. Please summarize your recommendations regarding each of these issues.

A. The following table summarizes the Company request and Staff's proposed adjustment for each issue:

Table 1 (000's of Dollars).

	OR Allocated	Staff	Adjustment
Issue 1 - Gas Storage in Rate Base	$29,758	$29,758	$0
Issue 2 - Gas Storage (non-labor) Operating Expenses	$3,134	$2,116	($1,018)
Issue 3 - Gas Purchase Expense	$0	$0	$0
Issue 4 - IT Projects	$34,462	$34,047	($415)
Issue 5 - Taxes Other Than Income	$41,053	$41,268	$215
issue 6 - Insurance [Confidential]	$503	$252	($251)
Issue 7 - Prepaid expenses	$0	$0	$0
Issue 8 - Accounting Records	$386	$0	($386)
Total - Staff Proposed Adjustment	$109,296	$107,441	($1,855)

ISSUE 1. GAS STORAGE IN RATE BASE

Q. Please describe the gas storage costs at issue.

A. Storage gas consists of two components, "cushion gas" and "working gas inventory." "Cushion gas" is permanently retained in storage to maintain operational pressure and prevent water deterioration in an underground storage reservoir. "Working gas inventory" is the gas that flows in and out of the storage reservoir, or Liquid Natural Gas (LNG) tank, to serve customer loads.

Q. Please summarize NW Natural's and Staff's proposed rate treatment of the NW Natural's gas storage costs.

A. NW Natural included a total of $29,758,000 for Oregon allocated gas storage in the Test Year rate base, of which $20,304,000 is "cushion gas" and $9,454,000 is "working gas."[1] NW Natural's working gas amount for the twelve-month base year ending December 31, 2019, is $16,593,000. Staff supports including the cost of working gas and cushion gas inventory in rate base and recommends adjusting the amount included in the Test Year as proposed by NW Natural.

Q. Please summarize the Commission's historical treatment of gas storage in rate base.

[1] NW Natural workpaper "UG 388 - Exh. 1000 - WP3 – Other Rate Base Items – Amended.xls", tab "Cushion Gas", rows 93-106.

A. All three regulated gas utilities serving in Oregon currently include these costs in rate base as a result of stipulations reached by the parties and adopted by the Commission.[2]

Q. Did Staff issue data request(s) to NW Natural concerning working gas inventory?

A. Yes. In addition to reviewing the Company's responses to SDRs 057 and 058, Staff issued DR 289 requesting monthly storage inventory levels, by gas volume and dollar value, as well as the monthly storage guideline for each storage facility, for the past 10 years. Based upon NW Natural's responses to DR 289, "cushion gas" is valued in this rate case at its cost when placed in their storage facilities.[3]

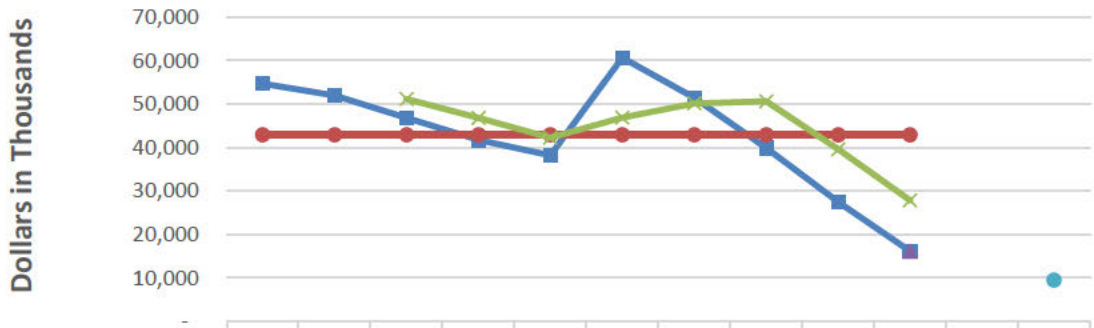
Q. Please summarize Staff's analysis of NW Natural's responses to DR 289.

A. Using data provided in NW Natural's response to DR 289, data provided in the original filing, and supporting Company work papers,[4] Staff calculated the dollar amount for working gas inventory in rate base using the most recent calendar year (2019), a three-year annual moving average, and a ten-year average (2010 – 2019). Staff's practice is to consider the most recent three-year averages more heavily than a longer-term trend as the basis to calculate an adjustment for gas storage in rate base. Staff believes near term trends in gas pricing are likely to provide a more accurate projected gas price for future

[2] See e.g., *In the Matter of Northwest Natural,* Order No. 13-349 at 5 (Commission adopting stipulation including NW Natural Gas Company's working gas inventory in rate base).
[3] See Exhibit Staff/302, Fjeldheim.
[4] Exhibits NW Natural/1001 -1014, Walker; and Company Excel work paper "UG 388 - Exh. 1000 - WP3 – Other Rate Base Items – Amended.xls", tab "Cushion Gas", rows 93-106.

periods. For example, the Oregon city gate price for natural gas was approximately $7.79 per dekatherm in 2009, approximately $4.82 per dekatherm in 2013, and approximately $3.90 per dekatherm in 2018.[5] Staff's recommendation is based on a review and comparison of NW Natural's previous three-year (2017-2019) gas storage average dollar amount of $27.8 million, the 2019 calendar year actual dollar amount of $16.12 million (both amounts exclude cushion gas), and NW Natural's requested Test Year working gas amount of $9.45 million.

Table 1



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	UG 388 TY
Working Gas Storage Inventory	54,718	51,968	46,848	41,720	38,221	60,691	51,446	39,913	27,415	16,116		
10-Year Annual Average	42,906	42,906	42,906	42,906	42,906	42,906	42,906	42,906	42,906	42,906		
3-Year Moving Average			51,178	46,845	42,263	46,877	50,119	50,683	39,591	27,815		
12 month average										16,116		
UG 388 Test Year												9,454

[5] Pricing provided by the U.S. Energy Information Administration and accessed at https://www.eia.gov/dnav/ng/hist/n3050or3a.htm.

Q. What is Staff's proposed adjustment to Gas Storage in Rate Base?

A. NW Natural's requested $9.45 million for working gas is below the most recent calendar year 12-month, the three-year moving, and the ten-year averages. NW Natural's request of $20,304,334 for base gas (cushion gas) represents a $793,700 increase from the prior rate case (UG 344).[6] The Company discussed this increase with parties during regularly scheduled quarterly Purchased Gas Update (PGA) meetings in the latter half of 2019, and explained cushion gas volume was slightly higher as compared to previous rate cases due the results of a recent study of the Mist storage facility. Staff proposes no adjustment to either working gas or cushion gas at this time and recommends allowing the total amount of $29,757,922 for gas inventory in the Test Year, as requested by NW Natural.

[6] See Exhibit Staff/302, Fjeldheim.

ISSUE 2. GAS STORAGE OPERATING EXPENSE

Q. What is "gas storage operating expense"?

A. NW Natural records "gas storage operating expense" in Federal Energy Regulatory Commission (FERC) Accounts 816 (wells expenses), 818 (compressor station expenses), 819 (compressor station fuel and power), 820 (measuring and regulating station expenses), 821 (purification expenses), 832 (maintenance of reservoirs and wells), 834 (Compressor Expense - maintenance), 840 (operation, supervision and engineering – other storage), 845 (power/fuel/rents – other storage), and 847 (maintenance – LNG terminal and processing).[7]

Q. Please summarize NW Natural's proposal related to "gas storage operating expense."

A. The Company proposes to begin with actual gas storage operating expenses incurred January through September of 2019 and with additional expenses forecast for the remaining three months of 2019 to develop their total Base Year expenses.[8]

[7] The full description of 18 C.F.R. FERC Gas Accounts can be accessed here: https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=054f2bfd518f9926aac4b73489f11c67&rgn=div5&view=text&node=18:1.0.1.6.46&idno=18.

[8] Exhibit NW Natural/1007, Walker/1, lines 4-23.

Q. Please summarize the Commission's historical treatment of "gas storage operating expense."

A. Staff was unable to identify an order whereby the Commission specifically addresses its policy regarding the proper amount of "gas storage operating expense" to include in rate base.

Q. What is Staff's analysis and recommendation?

A. Staff practice is to compare the previous three years' expense and longer-term trends to the requested Test Year amount, relying more heavily on recent trends unless there is a reason not to do so. For example, if a recent change in state or Federal regulations were to require additional compliance or operating costs on a going forward basis, a longer-term trend analysis would capture only a small portion of the expected Test Year expense. Conversely, if a utility incurs significant onetime costs in a Base Year period that are not adjusted out for the Test Year, a shorter-term analysis would allow a utility to recover rates in excess of their projected future expenses.

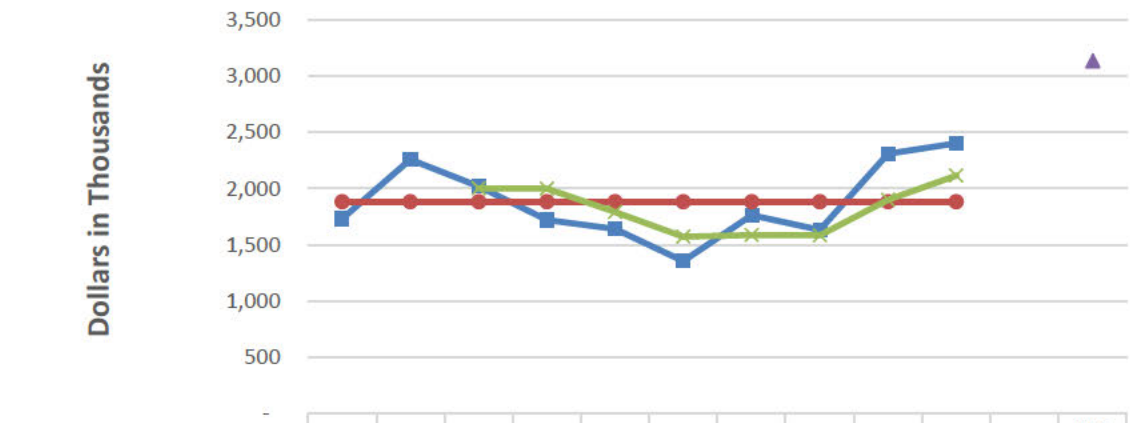
Staff initially reviewed NW Natural's responses to Standard Data Request (SDR) 057 for Base Year transaction details, SDR 058 for three years of summary non-labor expenses and the Company's Test Year expense projections, and the Company's opening testimony and supporting work papers.[9] Staff noted several categories of expenses booked to "gas storage operating expenses" that this Commission traditionally disallows in

[9] Staff's review of gas storage operating expense in this testimony is limited to non-labor expense. Labor expense is addressed in the testimony of Staff witness Heather Cohen.

whole or in part. These expenses included those for meals, meal tickets, travel, refreshments, and awards. Other members of Staff are evaluating these expenditure categories and they are not considered here.

In addition to its review NW Natural's response to SDR 057, Staff issued DR 288 seeking 10-years of historical "gas storage operating expense" results, with labor expenses broken out separately. Please see Table 2 for a comparison of gas storage operating expenses.

Table 2



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	UG 388 TY
Gas Storage Operating Expense	1,732	2,259	2,020	1,721	1,642	1,356	1,763	1,634	2,310	2,403		
10-Year Annual Average	1,884	1,884	1,884	1,884	1,884	1,884	1,884	1,884	1,884	1,884		
3-Year Moving Average			2,004	2,000	1,794	1,573	1,587	1,584	1,902	2,116		
UG 388 Test Year												3,134

Q. What else did you consider when arriving at your recommendations regarding NW Natural's gas storage operating expense?

A. NW Natural has not significantly expanded underground storage capacity at Mist[10] or any of their three liquefied natural gas (LNG) storage terminals. In fact, in May of 2019, NW Natural released 600,000 dekatherms of storage capacity to Cascade Natural Gas Corporation.[11] However, NW Natural proposes a 30.4 percent increase in total gas storage operating expenses from 2019 to the Test Year and a 91.8 percent increase from 2017 to the Test Year. In response, Staff is issuing a follow up DR requesting that NW Natural explain the large percentage increase in "gas storage operating expense" accounts in recent years.

Q. Please summarize your proposed adjustment to underground storage operating expense.

A. Staff proposes using the three-year average value (2017 – 2019) This will reduce NW Natural's requested "underground storage operating expense" by $1.018 million, from $3.134 million to $2.166 million.

[10] The North Mist expansion has a dedicated tariff and the expenses associated with the operations of North Mist are not charged to general rate payers and are not included in this rate case.
[11] Cascade Natural Gas Corporation Q3, 2019 PGA update meeting presentation, slide 5.

ISSUE 3. PURCHASED GAS & OTHER GAS EXPENSE

Q. What is "other gas expense?"

A. For purposes of my analysis, "other gas expense" are expenses recorded in FERC account 813, and includes the cost of materials and non-labor expenses incurred in connection with gas supply functions, including research and development, not provided for in any other FERC account for gas expense.[12]

Q. Please summarize NW Natural's proposal related to other gas expense.

A. According to the Company's response to Staff DR No. 287, NWN is not seeking any test year expense associated with FERC account 813 and there have been no recent historical expenses charged to this account.

Q. Please summarize NW Natural's proposal related to gas purchases.

A. In the Company's response to Staff DR No. 287, NWN states:

> Gas supply expenses are not included in the Test Year on an itemized basis. Commodity and pipeline demand charges are administered for ratemaking on an annual basis in the Purchased Gas Adjustment (PGA) filing. For rate cases, the Company includes current revenue rates including the current commodity (weighted average cost of gas or WACOG) and demand rate increments that are built into billing rates. On the expense side, the cost calculated by the same volumes and rate increments are included as gas costs. As a result, the revenue recovered for gas costs and expense incurred for gas costs are equal, and the gas cost component does not produce any impact on incremental revenue requirement.

[12] See 18 C.F.R. § 205 (FERC account 813).

Q. Please describe Staff's proposed adjustment of purchased and other gas expense.

A. The actual cost of gas is reconciled with customers via the annual Purchased Gas Adjustment.[13] NW Natural is not seeking any recovery for other gas expense or purchased gas expense in this rate proceeding. Staff has confirmed the Company's response with a review of their workpapers. Therefore, Staff has no proposed adjustment for purchased and other gas expense in this rate case at this time.

[13] Order No. 14-238 in Docket No. UM 1286. Docket No. UG 334/Advice No. 17-12A, reflects changes in the cost of purchased gas and the amortization rate for the Purchased Gas Adjustment balancing account that went into effect on November 1, 2017.

ISSUE 4. IT PROJECTS

Q. Please summarize NW Natural's "IT Projects"?

A. In NW Natural's Exhibit/600, Company witness Downing provides an overview of four separate IT projects:

1. Data Center Migration and Modernization establishes three geographically separated, redesigned, and technologically updated data center locations. The total project cost is $11.0 million, consisting of $10.2 million in dedicated project costs and $800,000 in construction overhead costs (COH).[14]
2. Customer Order Management (COM) is a total system replacement for the Company's 15-year old, public facing and internally integrated customer information management system (CRMS).[15] The total estimated project cost is approximately $13.5 million, consisting of $11.9 million in dedicated project costs and $1.6 million in COH. The Company plans to update their estimates with actual costs in their Reply Testimony.[16]
3. The Digital Portal replaces the Company's eight-year old website.[17] The new website will have enhanced security protocols, secure online payment processing, and will be more compatible with mobile computing devices. The total project cost is $11.5 million, consisting of $10.2 million in dedicated project costs and $1.5 million in COH.[18]

[14] NW Natural/600, Downing/24-29; See also NWN response to Staff DR 268(b) (The Company completed two separate rounds of financial analysis to determine the least cost option, which were provided in attachments 6 and 6a to NWN's DR 268 response).
[15] NW Natural/600, Downing/29-35.
[16] NW Natural/600, Downing/35 at 11-13; NWN response to Staff DR 270.
[17] NW Natural/600, Downing/35-49.
[18] See Staff Exhibit/305, Fjeldheim/NWN response to Staff DR 275.

4. Microsoft Office 365 E5 is a software as a service (SaaS) subscription for Microsoft Office software that replaces the Company's on premises enterprise software license for Microsoft Office 2019. Microsoft Office 365 renews on an annual basis and the cost is $850,000/year.[19]

Q. How did Staff review and analyze the proposed "IT Projects"?

A. Staff initially reviewed Mr. Downing's testimony, noting in particular the Company's statements regarding the current age and cybersecurity vulnerabilities of certain legacy information systems the "IT Projects" will replace. Throughout Mr. Downing's testimony, there is a recurring theme that the "IT Projects" will enhance their digital resiliency and reliability, especially considering the Company's headquarters location in the Cascadia subduction zone, evolving and increasing cyber security threats, and the significant age of several of the Company's IT systems and platforms.[20] Staff issued a number of data requests to gain a better understanding of the underlying functionality of the proposed projects, why they are needed now, and what steps the Company took to achieve least cost/least risk solutions.[21]

Q. Please summarize what the "IT Projects" do, the cost of the projects, and Staff's analysis of each component.

A. Staff will address each component of the "IT Projects" individually. To avoid Staff adjustment duplications, any adjustments contemplated for the

[19] NW Natural/600, Downing/49-51.
[20] NW Natural/600, Downing/2-3, 24-25, 30-31, and 35-39.
[21] Staff issued DRs 177-185 and 265-278. The Company in turn provided nearly 300 documents in response. See Exhibit Staff/305, Fjeldheim.

"IT Projects" will be coordinated with members of other Staff that are responsible for analyzing plant additions/adjustments in this proceeding. Staff is sending a DR requesting additional information on how COH is derived and how COH dollar amounts were determined for the "IT Projects" components.[22]

Data Center Migration and Modernization*:* Staff reviewed the Company's responses to SDRs 057 and 058, as well as Staff DRs 134, 185, 268, and 269, and found no discrepancies in the requested dollar amounts or reported expenditures for this project. Based on Company response to Staff DR 268, NW Natural performed two rounds of financial analysis for this component and engaged two outside consultants to perform due diligence reviews of multiple vendors prior to making their vendor selection. Based on Company testimony, the decision to relocate their corporate headquarters to 250 Taylor is the primary reason for the timing of this project. While the new office building itself is more resistant to seismic activity than the previous location,[23] the new office remains within the Cascadia subduction zone and therefore remains exposed to seismic risk. Rather than building a data center at the new office location, the Company decided to re-locate their primary data center operation from the heart of the Portland metropolitan area to their Sherwood, Oregon location and establish a backup site in Bend, Oregon. In conjunction with the re-location, the Company is also acquiring new computer server hardware and software and is working with outside firms that specialize in configuring, mapping, and

[22] NWN response to DR 373 is pending.
[23] NW Natural/500, Pipes.

transferring data from existing systems to their newly purchased computer hardware. The Bend location is being newly built/configured to house the backup data center. The Sherwood location needed physical upgrades and modernization to serve as the primary data center and to also provide the Company with the ability to conduct business operations in the event of an emergency. There is a smaller, onsite data closet at the new headquarters, but it is not considered a primary IT system resource.[24] Per the Company's response to Staff DR 268, the Company budgeted $12.1 million for this component (not including COH, AFUDC or property taxes).[25] Based on the Company's latest budget-to-actuals report provided to Staff, the Company has spent $7.8 million to date. This component appears to be at or below the Company's internal project budget and is scheduled to be completed in May of 2020. Staff proposes no adjustments.

Customer Order Management (COM): Staff reviewed the Company's responses to Staff DRs 134, 185, 270, 271, and 272. Based on the Company's response to DR 272, this project was competitively bid. Staff has some questions about how COH dollar amounts were derived for this project and sent DR 373 requesting additional information regarding how COH costs were derived and apportioned to all of the "IT Projects". Staff did not note any cyber security enhancements associated with this project. Based on the Company's January 2020 budget-to-actuals report, this project appears to be on budget.

[24] NW Natural/600, Downing/26-27.
[25] January 2020 Budget to actuals report provided in Company's response to Staff DR 268(g) - "UG 388 DR 272 Attachment 10.PDF".

However, several project change orders required the Company to increase the budget for this project by $1.75 million, an increase of 17.3 percent over the original budgeted amount.[26] Staff has not identified any specific expenses associated with this project that require adjustment.

Staff questions Mr. Downing's assertion in testimony that:

> The new COM system will ultimately provide cost savings to customers both by reducing reliance on developer resources and by dramatically shortening the training required for new employees. The efficiencies expected from the COM system averted the need to hire up to four additional FTEs on the Customer Acquisition team that would have been required due to order volume.[27]

Staff has not seen direct evidence presented in this case to support this assertion. If COM is designed to enhance employee efficiency and reduce customer service response times by one third,[28] it seems reasonable to assume that the increased efficiencies of the new system could reduce the number of existing customer service staff while serving the same client loads and reducing customer request turnaround times. Staff recommends the Company track the efficiency gains of the new system for use in the Company's next general rate case.

Digital Portal: Staff reviewed the Company's responses to SDRs 057 and 058, as well as Staff DRs 134, 185, 270, 271, and 272, and found no discrepancies in the requested dollar amounts or reported expenditures for this project. This project is replacing the Company's current website, which is eight years old

[26] NW Natural response to Staff DR 272, attachments 5-10, provide the Company approved change orders for the project budget increases.
[27] NW Natural/600, Downing/34 at 21-22 and 35 at 1-5.
[28] NW Natural/600, Downing/33 at 15-23.

and is effectively at system end of life.[29] Staff notes this project provides several cyber and system security features, is optimized for mobile computing devices, will enhance reliability of the web portal, will free up internal IT staff from having to perform website maintenance tasks, and will further protect the Company's core computing systems from external intrusions.[30] The Company used a competitive bid process to award the contracts for this project and Staff did not identify any concerns with the proffered bids. Staff did raise a question regarding Mr. Downing's assertion in testimony that this component will save customers money:

> For instance, the new system includes more than 58 individual components delivering over 100 content pages and over 35 functional applications that have been completely reengineered and designed to facilitate self-service participation in all of the Company's customer convenience programs, account management features, and billing and payment options. Ready access to these functions and programs on any device will save customers time, money, and frustration.[31]

This statement seems to imply that despite the cost of several million dollars that rate payers will pay via higher rates, all customers will receive a net economic benefit from the project. Staff issued DR 276 requesting elaboration as to how this component saves customers money. The Company's response, in part, states:

> Indirect cost-saving benefits to customers include enhanced cybersecurity, and removing technical barriers for mobile users to enable more participation in payment and financial assistance programs. Additionally, more customers will have access to money-saving information such as energy saving tips and programs and

[29] NW Natural/600, Downing/35-37.
[30] NW Natural/600, Downing/37-39.
[31] NW Natural/600, Downing/44 at 4-10.

> incentives for high-efficiency equipment that saves energy and money.

The Company's response implies that this component may save certain customers money, but as whole does not provide a savings to all customers. In any event, Staff has not identified costs that should be disallowed and proposes no adjustment to this component.

Microsoft Office 365 E5: Staff reviewed the Company's responses to SDRs 057 and 058, as well as Staff DRs 134, 185, 277, 278, and CUB DR 18, and found some discrepancies in the requested dollar amounts for this project. Per Company testimony, the Company is modernizing their internal phone system by upgrading to Skype for Business. However, Microsoft has effectively rebranded Skype for Business as Microsoft Teams, which will be an integral part of Microsoft Office 365 palette business productivity software. Because Microsoft Teams has effectively replaced Skype for Business, Staff had some concerns regarding the Company's plant addition of $1.2 million for Skype for Business computer software, recorded in FERC account 303.1.[32] Per the Company's response to CUB DR 18:

> See UG 388 CUB DR 18 Attachments 1 and 2 for quotes from Microsoft related to this "Skype for Business" project. For clarity, in the Test Year the costs of Skype for Business will be included the costs for Microsoft Office 365, and the contracts requested in this data request will no longer be in effect.

[32] NWN Natural response to Staff DR 134.

However, it is not clear to Staff that the Company's statement above is correct. The Company later contradicts itself in another data response, in which the Company states:

> There are two Skype for Business 2019 products: online and on-premises. The Skype for Business 2019 online end of life date is July 31, 2021. The Skype for Business 2019 on-premises end of life date is October 14, 2025. NW Natural has deployed the on-premises version of Skype for Business.[33]

If the Company plans to use the on-premises version of Skype for Business, Staff recommends that a portion of the Company's Oregon allocated annual expense[34] for Microsoft Office 365 E5 be adjusted to remove Microsoft Teams telephony features. Please see the following table for a breakout of Microsoft Office 365 E5 price points.[35]

Table 3

	Number of users	MS Office 365 E5 monthly fee (calling surcharge separate)	Domestic only call plan (requires MS Office 365 E5)	Domestic & International call plan (requires MS Office 365 E5)		UG 388 MS Office 365 E5 ask ($ amt)	UG 388 MS Office 365 E5 ask ($ amt) OR 90% alloc (Per NWN reply to AWEC DR 20, Attch 1)
	Head count	$35/month per user	$12/month per user	$24/month per user		850,000	765,000
NWN Employees	1,168	$ 40,880	$ 14,016	$ 28,032			
Contractors	210	$ 7,350	$ 2,520	$ 5,040			
Monthly Subtotals	1,378	$ 48,230	$ 16,536	$ 33,072			
Total annual expense		$ 578,760	$ 198,432	$ 396,864			
OR allocated expense		$ 520,884	$ 178,589	$ 357,178			
Proposed adjustment - OR allocated expense		$ 244,116					

[33] NWN response to Staff DR 278(a).
[34] NWN response to CUB DR20, Attachment 1.
[35] Microsoft Office 365 pricing comparisons accessed March 19, 2020 here: https://www.microsoft.com/en-us/microsoft-365/business/compare-more-office-365-for-business-plans.

Staff recommends removing the online Microsoft Teams telephony service by adjusting the Company's Oregon allocated Test Year expense for Microsoft Office 365 E5 from $765,000 to $520,884 a year, a $244,116 reduction.

Staff also recommends a reduction to the IT staffing request for the dedicated Skype Administrator position in the amount of $171,000. With the functionality of Skype for Business being rolled into Microsoft Teams, and the lack of clarity regarding whether the Company is employing onsite Skype for Business or the cloud-based Teams for long term telephony service, a new IT&S position dedicated to supporting Skype for Business appears to be imprudent.

Q. What are Staff's recommendations for the "IT Projects"?

A. Staff recommends reducing the proposed OR allocated request for Microsoft Office 365 E5 by $244,116 and reducing the proposed IT&S staffing request by $171,000. Staff proposes no changes to the Data Center Migration and Modernization, the Customer Order Management (COM), or the Digital Portal components.

ISSUE 5. TAXES OTHER THAN INCOME

Q. Please provide a summary of the Commission's historical treatment of taxes other than income.

A. The category "taxes other than income" (Other Taxes) typically includes franchise fees, the regulatory fee imposed by the OPUC, property taxes, payroll taxes and other miscellaneous taxes or fees, e.g. Oregon Dept. of Energy (ODOE) fee, incurred by the energy utility. Payroll taxes are included as a component of wages and salaries, which is discussed in a separate section of Staff's testimony.

Franchise fees, along with business or occupation taxes, licenses, and similar exactions or costs, are allowed as operating expenses for ratemaking purposes on the condition these costs do not exceed 3.0 percent of gross revenues for a gas utility.[36] For simplicity, these costs are referred to collectively as franchise fees. The OPUC fee and ODOE fee are also included in operating expenses for ratemaking purposes. In rate cases, franchise fees, and the OPUC fee are a function of the fee rate multiplied by gross revenues and are called revenue sensitive costs. Additionally, these revenue sensitive fees are included in the conversion factor used to determine the revenue requirement.

Property taxes related to property that is not yet used and useful may not be included in customer rates of a gas utility.[37] Hence, these property taxes are

[36] See OAR 860-022-0040(1). Fees that exceed three percent must be charged to the customers within the jurisdiction assessing the fee. (OAR 860-022-0040(6).

[37] See ORS 757.355(1).

excluded from the test year operating expenses. Property taxes related to property that is used and useful are included in test year operating expense and are usually forecasted for ratemaking purposes based on historical property tax information.

Franchise Fees

Q. What is the Commission's historical treatment of franchise fees in a general rate case?

A. The revenue requirement for franchise fees is revenue sensitive. Accordingly, Staff determines a franchise fee rate based on a ratio of annual fees and revenues. Historically, Staff has accepted a franchise fee rate based on a three-year average rate. However, Staff has reviewed other evidence such as a historical trend to determine reasonableness of the proposed franchise rate and the resulting franchise fees.

Q. Would you please explain the Company's proposal for franchise fees?

A. The franchise fees included in the test year are $14,975,360. According to the Company's testimony, "franchise fees were derived by applying the effective rate of 2.393 percent to gross sales and transportation revenue and miscellaneous franchise revenues to provide a forecast for total franchise fees for both the base year and test year."[38]

The Company did not provide evidence to show how the "effective rate" was determined or support the "effective rate" in testimony or its workpapers. Staff

[38] NW Natural/1000, Walker/19 at 11-14 and NW Natural/1011, Walker/1 at 10.

issued DR No. 299 requesting the underlying calculation and historical actuals for franchise fees and related revenues.[39] According to the Company's response to Staff DR No. 299, the 2.393 percent was used for the 2019 Purchased Gas Cost Adjustment (PGA) filing and was based on actual franchise fees from July 1, 2018 through June 30, 2019. In addition to the Company's response to DR 299, Staff compiled Company workpapers from the 2017 and 2018 PGA filings to obtain three years of comparable Oregon revenues and franchise fees.

Q. What is Staff's recommendation regarding the franchise fee rate the Company proposes?

A. Staff proposes the franchise fee rate be calculated based on a three-year average of the last the three years of actual data provided as part of the Company's annual PGA. This results in a franchise fee of 2.388 percent versus the Company's 2.393 percent. The 2.388 percent will be used in the Test Year conversion factor for the revenue requirement. Also, Staff will apply this percentage to Staff's adjusted test year revenues to calculate the amount of franchises fees in O&M expense.

OPUC Regulatory Fee

Q. Would you please explain the Company's proposal for the OPUC fee?

A. The Company has proposed a rate of 0.300 percent applied to test year gross revenues of $625,798,598.[40]

[39] See Staff/308, Fjeldheim/NW Natural Response to Staff DR 299.
[40] NW Natural/1002, Walker/1 at 6, column c.

Q. Does Staff find the 0.300 percent rate reasonable?

A. No. According to Order No.20-054, the most recent OPUC order setting the annual fee rate, the rate is set at 0.350 percent.[41] Since this rate is applied to gross revenues, the amount of fees recommended by Staff will be a function of the amount of gross revenues recommended by Staff in subsequent opening testimony. Also, Staff will apply this percentage to Staff's adjusted test year revenues to calculate the amount of the OPUC fee in O&M expense. Based on the Test Year gross revenue in the Company's filing, the change in the OPUC fee would result in an adjustment increase of $313,899 for OPUC fees. (($625.8M x 0.0035) – (625.8M x 0.0030))

ODOE Fee

Q. Would you please explain the Company's proposal for the ODOE fee?

A. The Company states in testimony, "this fee was calculated by first calculating an average effective rate for the two-year period of 2018 and 2019, and then applying the average effective rate to total operating revenue."[42] This results in a proposed rate of 0.143 percent and ODOE test year fees of $893,093.

Q. Does Staff recommend a change in the Company's proposed rate of 0.143 percent?

A. Yes. Staff proposes the rate be calculated on a three-year average using the last three years of actual data. This results in 0.1368 percent versus the Company's calculated 0.143 percent. Based on normalized Test Year

[41] See ORS 756.310(3).

[42] NW Natural/1000, Walker/20 at 2-5.

revenues of $625.8 million, this results in a reduction of ($37) thousand for ODOE fees.

(($625.8M x 0.001368) – (625.8M x 0.00143)).[43] Since the ODOE fee is not considered a revenue sensitive rate, there is no change to the conversion factor.

Property Taxes

Q. Would you please explain the Company's proposal for Property Taxes?

A. The Company includes $23.104 million in the test year for property taxes. As shown in the Company's Exhibit 1011, the Company derived expense for property taxes by using a three-year average rate based on the ratio of taxes paid in 2017, 2018, and 2019 to projected net plant at December 31 of the prior year. The average rate calculated was applied to December 31, 2019, net plant balance and forecasted net plant for 2020.

Q. What is Staff's recommendation regarding property taxes?

A. Staff has no concerns with the Company's adoption of a three-year average to develop their property tax rate. For opening testimony, Staff proposes $23.074 million of property tax for the test year, a ($30) thousand reduction.[44] For the final revenue requirement in this case, Staff recommends truing up property tax to the final level of Test Year net plant determined by the Commission by using Staff witness John Fox's adjusted total plant less the Test Year accumulated depreciation as proposed by Staff witness Ming Peng.

[43] See Staff electronic workpaper "NWN UG 388 Exh 300 Issue 5 Taxes Other Than Income" tab "NWN Exhibit 1011 - Other Taxes".

[44] *Id.*

Summary of Other Taxes

Q. What is Staff's recommendation regarding the revenue sensitive rates the Company proposes?

A. Staff's proposes the Company increase the OPUC rate in the conversion factor to 0.00350, decrease the Company's proposed franchise fee rate of 2.393 to 2.388 percent, decrease the Company's proposed ODOE fee rate of 0.143 to 0.1368, and recommends no change to the Company's proposed property tax rate.

Q. What is Staff's recommendation regarding the expense the Company proposes in its test year?

A. Since both the franchise fees and OPUC fee are revenue sensitive and thus are a function of revenues, Staff will propose an adjustment based on other Staff proposals regarding Test Year revenues. With regard to the ODOE fee, Staff proposes $856,224 in fees; a reduction of ($37) thousand. Finally, for property taxes, Staff recommends $23.074 million, a reduction of ($30) thousand, with a final true-up based on the final net plant determined in this case.

ISSUE 6. INSURANCE AND RISKS

Q. Please describe how Staff reviewed the Company's insurance and risks.

A. Staff reviewed the Company's response to SDRs 057, 058, 067-075, and confidential Staff DRs 300-304. Staff included cyber security as well as wildfire risk in this review. Staff noted with respect to property and casualty insurance coverage that the Company's retained risk increased in the Base Year and will remain elevated in the Test Year. This is largely due to elevated property and casualty losses in the Western United States due to widespread and increasingly common wildfire losses the past several years. These loss trends were not specific to the Company.

Q. What is the purpose of D&O Insurance?

A. Directors and Officers (D&O) insurance shields a utility's directors and senior officers against the risks associated with managing the Company's business.

Q. Briefly describe your recommendation related to D&O Insurance.

A. NW Natural included in its filed case **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** in total company D&O Insurance expense, which is **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** on an Oregon-allocated basis.[45] This amount represents the supplemental second, third, fourth, and Broad Form Side A - Difference in Conditions (DIC) premiums. Staff recommends that 50 percent of the total cost of all layers of D&O Insurance be

[45] Staff/307, Fjeldheim.

removed from A&G, which is consistent with Commission past practice, as described below. Based on Staff analysis, removing 50 percent of D&O Insurance would result in an Oregon-allocated adjustment of **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**.[46]

Q. What is Staff's proposed Adjustment?

A. Staff proses to adjust D&O premiums by **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**.

Q. Why is D&O Insurance layered?

A. It is common in capital intensive and/or risk exposed industries that the ability to sufficiently insure from loss exposures often requires a financial capacity that is beyond the underwriting ability of a single insurer. This is because most insurance companies manage their exposure to risk by limiting the amount of insurance capacity they provide to any one policyholder. To acquire adequate coverage limits, diversify exposure, and reduce risk, an insurance structure is assembled where the primary insurer provides specific coverage terms and capacity limits, but less than the total coverage needed. Additional insurers provide supplemental capacity limits that are in addition to the primary layer over coverage while still following the basic terms and conditions of a primary layer.[47]

[46] Staff/307, Fjeldheim (Confidential).
[47] Insurance layering synopsis provided by Aon Risk Services (Section 24.02) and accessed at https://www.lexisnexis.com/legalnewsroom/insurance/b/applemaninsurance/posts/excess-insurance-and-umbrella-coverage-new-appleman-on-insurance-law-library-edition-chapter-24.

Q. Why is Staff recommending removal of 50 percent of D&O insurance premiums?

A. Staff's recommendation is consistent with prior Commission decisions. In Docket No. UE 197, Staff proposed that customers and ratepayers share the cost of D&O liability insurance. The Commission agreed that the cost of D&O liability insurance should be shared between ratepayers and shareholders.

> We concur with Staff that the cost of D&O insurance should be shared equally between shareholders and ratepayers to properly reflect the benefits and burdens of that expense. We eliminate 50 percent of the D&O insurance as a shareholder cost.[48]

In that case, the Commission found Staff's argument compelling that customers who have no say in electing or appointing utility Directors or Officers should not be held financially responsible for covering 100 percent of the insurance costs to cover against business decisions or improprieties by management that result in lawsuits.[49] This methodology has been followed by Staff in subsequent dockets in both electric and natural gas utility general rate cases.

Q. Please explain what other types of insurance were reviewed.

A. Staff also reviewed property insurance, liability insurance, terrorism insurance, workers' compensation insurance, and other risk management insurance. Please see Exhibit Staff/307, Fjeldheim for a list of these various types of insurances and a chart comparing premiums for these insurances over the last four years.

[48] *In re Portland General Electric Company*, OPUC Docket No. UE 197, Order No. 09-020 at 19-20 (Jan. 22, 2009).
[49] Order No. 09-020 at 20.

Q. Is Staff proposing an adjustment involving any of these types of insurances?

A. No. In reviewing the premiums paid for each of the different types of insurance, Staff concluded the Company's decision to carry these types of insurance coverage is prudent and that the insurance premiums appear reasonable as they have fluctuated only slightly from year-to-year. Because of the competitive nature of the insurance industry, it is Staff's position that premiums paid to protect the utility, and ultimately ratepayers, from high dollar casualty losses represents is a prudent business decision and that no adjustment is necessary.

Q. Does the Company have specific coverage for wildfire or cyber related losses?

A. The Company does not have a policy specific to wildfire, this risk category is a component of property and casualty coverage. The Company does carry a specific policy for cyber security risk.

Q. Is the Company taking additional action(s) to protect against wildfire or cyber security risks?

A. Yes. The Company is currently engaged in a multi-year process to modernize several of the computer systems, and specifically cites improved cyber security features as a driver for their IT investments. This is discussed in greater detail in Issue 3 of my testimony above. Regarding wildfire risk, the majority of the Company's distribution system in underground and insulated from direct fire exposure. In the event above ground facilities are threatened by wildfire, the Company can de-energize specific facilities and coordinates their firefighting

efforts with the firefighting Emergency Operations Centers (EOC). The Company notes that above ground facilities have never been threatened by fire.[50]

Q. Does Staff propose an adjustment to non-D&O insurance expense?

A. No. Staff does not propose adjusting insurance expense.

[50] See Exhibit Staff/307, Fjeldheim/Company response to DR 303 (Confidential).

ISSUE 7. PREPAID EXPENSES

Q. What are prepaid expenses and how are they recorded?

A. Prepaid expenses are payments made in advance for items such as undelivered gas, insurance, rent, and taxes. As the periods covered by prepayments expire, the value of these prepayments is reduced and the associated expense is charged to the proper operating account. Prepaid expenses are recorded in FERC account 165.[51]

Q. Did the Company include prepaid expenses in the rate case?

A. The Company stated in response to SDR 086 that "No prepayments are included in the Base Year's or Test Year's rate base (FERC account 165)".

Q. Does Staff have any adjustments associated with this issue?

A. No.

[51] See 18 C.F.R. § 205 (FERC account 165).

ISSUE 8. ACCOUNTING RECORDS

Q. Does Staff have any concerns regarding expenditure documentation provided in this proceeding?

A. Yes. In the Company's initial filing, Staff noted missing or limited transaction detail descriptions for individual transactions throughout the Company's response to SDR 057.[52] Staff subsequently issued DR 173 directing the Company to provide additional information and detailed descriptions for all Base Year expenditures. In response, the Company provided "UG 388 DR 173 CONF Attachment 1". After further review by Staff and continued dialogue with the Company, NW Natural supplied additional expenditure details in "UG 388 DR 173 CONF Supplemental Attachment 1". Despite the additional information provided, Staff continues to identify deficiencies with this response.

Q. Does Staff propose to adjust Base Year expenditures on the basis of insufficient transaction detail?

A. Yes. Staff identified 812 Base Year transactions in FERC accounts 816-847 that lack sufficient detail necessary to establish the business purposes of the expenditures. Staff proposes to disallow these expenditures until sufficient transaction description details and supporting documentation justifying their

[52] SDR 57 states:

> Please provide transaction summaries for Non-Labor costs recorded in all FERC Accounts for the Base Year. Please place in MS Excel and for each transaction include: a. Total amount charged, and as applicable, any subtotals assigned to Non-Utility/Total Company Allocation and/or OR-Allocation; b. Description of cost; c. Name of vendor (if applicable); d. Business Unit (Profit Center) being charged; e. Service provided (e.g., reports to stockholders, lease, etc.).

inclusion in the Base Year are provided for Staff review.[53] Please see Staff witness Marianne Gardner's testimony for additional information regarding disallowance for Base Year expenses due to insufficient transaction description details.

Table 4

FERC Account	Transaction count	Proposed adjustment - OR allocated dollar amount
FERC 816	22	($86,338)
FERC 818	26	$14,068
FERC 820	259	($92,612)
FERC 834	2	($253)
FERC 844	139	($38,389)
FERC 847	364	($182,673)
Totals	812	($386,197)

Q. Does this conclude your testimony?

A. Yes.

[53] See Exhibit Staff/308, Fjeldheim.

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STAFF EXHIBIT 301

Witness Qualifications Statement

April 17, 2020

WITNESS QUALIFICATION STATEMENT

NAME: Brian Fjeldheim

EMPLOYER: Public Utility Commission of Oregon

TITLE: Senior Financial Analyst
Energy Rates, Finance and Planning Division

ADDRESS: 201 High Street SE. Suite 100
Salem, OR. 97301

EDUCATION: Bachelor of Science, Business Accountancy
Regis University, Denver, CO

Bachelor of Science, Aviation Technology
Metropolitan State College of Denver, Denver, CO

EXPERIENCE: I have been employed as a Senior Financial Analyst by the Oregon Public Utility Commission since May of 2018 in the Energy, Rates and Finance Division. I currently perform a range of financial analysis duties related to natural gas and electric utilities, with a focus on rate case, operational audit, and annual Purchased Gas Adjustment (PGA) filings.

I have seven years of professional level financial analysis and accounting experience. I was previously employed as a Budget and Fiscal Analyst with the Oregon Department of Justice (DOJ), where I was responsible for the budget build and ongoing budget execution of four legal divisions with 165 staff members and a biennial budget of $75 million. Prior to DOJ, I was employed as a Senior Budget Analyst with the Oregon Department of Administrative Services (DAS) and was responsible for the budget build, ongoing budget execution and cash flow analysis for the state data center with a biennial budget of $165 million. Prior to DAS, I worked as a Financial Analyst for the Insurance Division of the Department of Consumer and Business Services (DCBS), where I performed financial analysis and solvency surveillance of nine insurers with annual revenues of $1.4 billion and assets of $1.1 billion.

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STAFF EXHIBIT 302

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Rates & Regulatory Affairs
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Request No.: UG 388 OPUC DR 289

289. Please provide, in a single electronic spreadsheet format:

a. Monthly historical working gas inventory balances (excluding labor dollars) for each storage facility (in both volume and in dollars) and the monthly working gas storage guideline, or goal or target, for each storage facility (in the same volume units as used for the inventory). Provide the monthly data requested above from the first date each storage facility was placed in operation through 2018, and to the extent as available monthly through 2019. Please indicate whether the values given above are for beginning or end of month. Separately identify any related labor expense for each calendar year from 2009 through 2018, and to the extent as available monthly through 2019. Provide results separately for total company and for Oregon; and

b. Historical cushion gas inventory balances for each storage facility (in both volume and in dollars), by month from the first date each storage facility was placed in operation through 2018, and to the extent as available monthly through 2019. For the dollar values provided, please provide an explanation as to how the dollar value was derived. Please indicate whether the values given above are for beginning or end of month. Separately identify any related labor expense for each calendar year from 2009 through 2018, and to the extent as available monthly through 2019. Provide results separately for total company and for Oregon.

Response:

a. Pursuant to a discussion with Staff clarifying the request, monthly historical working gas inventory balances (excluding labor dollars) for each storage facility (in both volumes and in dollars) and daily storage target data for each facility from 2010 to 2019 is included in 'UG 388 OPUC DR 289 Attachment 1." The first four tabs 'Portland LNG,' 'Newport LNG,' 'Jackson Prairie Storage,' and 'Mist Underground Storage' are the inventory ending balances for each facility. Base Year actuals and Test Year projections did not include storage facilities that are no longer used and, therefore, those storage facilities are not included in Attachment 1. The last tab 'Working Gas Storage Target' has all four storage facility target data per day. At certain times throughout the year, some storage facilities may not have target data. Some reasons why these facilities do not have target data include, but are not limited to, scheduled maintenance, heating

season to injection season transition, and no planned usage for the facility during that month. Labor expenses are not included in working gas inventory balances. All volumes are in therms.

b. Pursuant to a discussion with Staff clarifying the request, monthly historical cushion gas inventory balances for our Mist storage facility (in both volumes and in dollars) from 2010 to 2019 is included in 'UG 388 OPUC DR 289 Attachment 2." Mist is our only underground storage facility and, therefore, it is the only facility that has cushion gas. The accounts provided in Attachment 2 reference the different storage pools within the Mist storage facility. Cushion gas is valued at the weighted average cost of physical injections and, for working gas transfers, the weighted average cost of Mist working gas at the time of the transfer. The values given are ending month balances. Labor expenses are not included in cushion gas inventory. All volumes are in therms.

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Request No.: UG 388 OPUC DR 290

291. Does the Working Capital balance exclude Gas Inventory from Rate Base? If no, please provide:

a. A description of Working Capital as it relates to Gas Inventory in Rate Base; and

b. The monthly historical Working Capital balances (excluding labor dollars) for each storage facility. Provide the monthly data requested above from the first date each storage facility was placed in operation through 2018, and to the extent as available monthly through 2019. Please indicate whether the values given above are for beginning or end of month. Separately identify any related labor expense for each calendar year from 2009 through 2018, and to the extent as available monthly through 2019. Provide results separately for total company and for Oregon.

Response:

Based upon a subsequent discussion with Staff, Staff and the Company concluded that this question was asked inadvertently. Natural gas utilities do not use working capital for Oregon rate making.

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Request No.: UG 388 OPUC DR 374

374. In NW Natural's supporting workpapers "UG 388 - Exh. 1000 - WP1 - Revenue Requirements Model – CONFIDENTIAL.xls" and "UG 388 - Exh 1000 - WP3 - Other Rate Base Items – Amended.xls", Staff noted the volumes for Mist storage "cushion gas" increased in December of 2017 and again in February of 2019. Please provide:

a. A detailed explanation as to why cushion gas volumes increased.

b. Any supporting studies, consultant reports, or geological assessments that support increased Mist "cushion gas" volumes.

Response:

NWN periodically contracts with an engineering consultant to perform an independent evaluation of inventory at the Mist storage facility. The purpose of the study is to review inventory stored at the various pools, thus validating well performance and the procedures and assumptions of NWN's reservoir engineers. Consistent with industry standards, this is performed typically every five to seven years. The last study performed was in 2017.

NWN specifically uses this study to validate total capacity of the pools, determine the appropriateness of its inventory classification, and confirm the reasonableness of its loss assumptions. While the total inventory balances (cushion and working) were close to the consultant's estimates, we noted there was a noticeable difference between what the consultant considered "working gas" and "cushion gas" and what our records showed. Consequently, an adjustment from working gas to cushion gas was recorded in December 2017.

The consultant's report and NWN's conclusions and adjustments are documented in the following attachments:

UG 388 OPUC DR 374 Attachment 1 - Fairchild Study - 2017
UG 388 OPUC DR 374 Attachment 2- 2017 Mist Inventory Study Accounting Memo
UG 388 OPUC DR 374 Attachment 3- 2017 Mist Inventory Memo – Appendices

While this change moved us toward alignment with the consultant's report, we noted that there was still a volume difference between Accounting's records of cushion gas

and working gas and how operations viewed the classifications. NWN's reservoir engineer showed less in working gas and more in cushion gas. Furthermore, it is Engineering's assumptions of working gas capacities that are used to determine injections and withdrawals of working gas that are used to serve customers. In 2019, Accounting adjusted its records to better align with Engineering.

Our conclusions and summary of the adjustments are included in the following attachment:

UG 388 OPUC DR 374 Attachment 4- 2019 Mist Working Gas Adjustment Accounting Memo

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STAFF EXHIBIT 303

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Request No.: UG 388 OPUC DR 288

288. Please provide, in a single electronic spreadsheet format, for each calendar year from 2008 through 2018, and to the extent available monthly through 2019, the underground storage operating expense results, including a breakdown of the underground storage operating expense into supervision and engineering, other expenses, and other equipment categories. Separately identify any related labor expense for each calendar year from 2008 through 2018, and to the extent available monthly through 2019. Provide results separately for total company and for Oregon.

Response:

Please see "UG 388 OPUC DR 288 Attachment 1" for the 2019 monthly, and "UG 388 OPUC DR 288 Attachment 2", which due to its size is being submitted on a mailed CD, for calendar year 2008 through 2018, breakout for the following:

Underground Storage Expense:

Operations

- FERC 816 – Wells Expense
- FERC 818 – Compressor Station Expense
- FERC 819 – Compressor Station Fuel
- FERC 820 – Measuring and Regulator Station Expense
- FERC 821 – Purification Expense

Other Storage Expense:

Operations

- FERC 840 – Supervision and Engineering

Liquified Natural Gas Expense:

Operations

- FERC 844 – Supervision and Engineering
- FERC 845 – LNG Fuel

We have also separately identified labor expense for each of the above FERC accounts for all years 2008-2019 in each Attachment.

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Request No.: UG 388 OPUC DR 375

375. In the Company's response to SDR 058, DR 288, and the Company's supporting workpaper "UG 388 - Exh. 1000 - WP1 - Revenue Requirements Model – CONFIDENTIAL.xls", tabs Exhibit 1007, the FERC accounts associated with gas storage operating expense (FERC 816 – 847), Staff noted significant percentage increases in these FERC accounts over the past four years. Please provide a detailed explanation of the primary driver(s) for the large percentage increase in gas storage operating expenses from:

a. 2015 to 2016 of 30.0 percent
b. 2018 to 2019 of 41.4 percent
c. Base Year to Test Year of 30.4 percent

Response:

After an inquiry with OPUC Staff, the Company recognizes that the "gas storage operating expense" referenced in the question relates to non-payroll costs. In addition, subpart "b" of the question should read "2017 to 2018 of 41.4 percent".

a. The primary driver of the increase in gas storage operating expenses from 2015 to 2016 was the Company's corrosion mitigation activities for the Portland LNG tank in 2016. Those activities included cleaning and painting the entire tank.

b. The primary drivers of the increase in gas storage operating expenses from 2017 to 2018 are listed below:

   First, the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) adopted a new rule (API 1171) at the end of 2016. This rule required the Company to plan, develop and implement a well integrity program. The Company hired outside experts in 2018 to assist in complying with this new federal requirement.

   Second, the Company rebuilt the two large compressors at Mist (GC 500 and GC 600) in 2017. The costs of those rebuilds were then amortized over a five-year period, starting in 2018.

Third, the Company upgraded the Newport LNG facility in 2018. The Company's engineering department had recommended increasing the cycling of liquefaction/vaporization systems to reduce the CO2 build up in the tank. The cycling of the Newport LNG facility has been a topic on several of the Company's quarterly meetings with Staff. The increased usage of the facility drove higher O&M costs, and the new upgrade required different plant processes, process automation enhancements and cold box remediation efforts.

c. The Oregon Test Year expense for Gas Storage Operating Expenses increased $732k, or 30%, as compared with the Base Year. The primary drivers of this increase are: 1) four compressors are being rebuilt in 2020 and the expense is being amortized over 5 years; and 2) the Company is leasing a compressor that began in July 2019, so the Test Year includes the annualized amount of this expense. This explanation is included in NW Natural/900, page 12, lines 13-22.

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Data Request Response

Request No.: UG 388 OPUC DR 287

287. Please provide, in a single electronic spreadsheet format, for each calendar year from 2009 through 2018, and to the extent available monthly through 2019, the other gas supply expense results, as well as a breakdown of the other gas supply expense into other gas purchases, purchased gas expenses, natural gas storage transactions, gas used for products extraction, other gas expenses, and Gas Technology Institute categories. Separately identify any related labor expense for each calendar year from 2009 through 2018, and to the extent available monthly through 2019. Provide results separately for total company and for Oregon.

Response:

Gas supply expenses are not included in the Test Year on an itemized basis. Commodity and pipeline demand charges are administered for ratemaking on an annual basis in the Purchased Gas Adjustment (PGA) filing. For rate cases, the Company includes current revenue rates including the current commodity (weighted average cost of gas or WACOG) and demand rate increments that are built into billing rates. On the expense side, the cost calculated by the same volumes and rate increments are included as gas costs. As a result, the revenue recovered for gas costs and expense incurred for gas costs are equal, and the gas cost component does not produce any impact on incremental revenue requirement.

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STAFF EXHIBIT 305

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Data Request Response

Request No.: UG 388 OPUC DR 177
177. Please provide IT cost information in the following MS Excel table format:

Costs	**2015**	**2016**	**2017**	**2018**	**2019**	**UG 388 Request**	**Percent Change 2015 to UG 388**
Personnel							
OPE *							
Services & Supplies							
Contracting / Professional Services							
Other							
Total							

*** Other Payroll Expense (e.g. health benefits, Social Security tax, Medicare tax, etc.)**

Response:

See UG 388 OPUC DR 177 Attachment 1 for response. Based on email clarification from Staff provided on January 24, 2020, the attachment presents Oregon-allocated O&M IT&S information.

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Request No.: UG 388 OPUC DR 178
178. Please provide NW Natural's FTE count in the following MS Excel table format:

	2015	2016	2017	2018	2019	UG 388 Request	Percent Change 2015 to UG 388
FTE							

Response:

See Attachment UG 388 OPUC DR 178 Attachment 1.

FTE count below represents year end IT&S figures, per email clarification from Staff provided 1/24. These are system IT&S FTE numbers and are not allocated to OR jurisdiction.

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Request No.: UG 388 OPUC DR 179

179. For each of the component FTE included in NW Natural's response to DR174:
a. Please list the current job-title.
(i.e. Database Administrator 2, etc.).
b. Please list the time in-service at NW Natural.

Response:

Note: This response is for the data in DR 178, not DR 174.

a. See UG 388 OPUC DR 179 Attachment 1 for the job-title for each year as of the end of the applicable year.

b. Also see UG 388 OPUC DR 179 Attachment 1 for the service time in years as of the end of the applicable year.

FTE count represents year end IT&S figures, per email clarification from Staff provided January 24, 2020. These are system IT&S FTE numbers and are not allocated to OR jurisdiction.

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Request No.: UG 388 OPUC DR 180

180. What is the annual turnover rate of IT personnel at NW Natural?

Response:

From 2016 through 2019, the annual turnover rate of IT personnel at NW Natural is 17.6%.

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Request No.: UG 388 OPUC DR 181

181. What is NW Natural's average recruitment time period for hiring IT personnel (from the initial job posting until employee onboarding begins)?

Response:

The average time from 2017 through 2019 for hiring IT personnel (from the initial job posting until employee onboarding begins) was eighty-eight (88) days.

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Data Request Response

Request No.: UG 388 OPUC DR 182

182. Based on exits interviews, what are the three primary reasons employees listed for leaving NW Natural?

Response:

Based on exit interviews, the three primary reasons that employees provided for leaving NW Natural are:

1. Retirement
2. Career or other employment
3. No reason given

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Request No.: UG 388 OPUC DR 183

183. In NW Natural /600, Downing, Mr. Downing mentions that certain new positions are currently being performed by contract work.
a. What are the contracting costs associated with these positions?
b. When does the contract work end?
c. Please highlight the contracting costs in work papers that demonstrate where these costs are being removed.

Response:

On NW Natural 600/Downing/Page 20/Lines 18-21, Mr. Downing states: "Traditionally, NW Natural's Linux servers have been managed by contractors. A new FTE Linux Administrator will help ensure consistent service delivery as well as minimize disruptions in the Company's operations, thereby helping to ensure reliable service to customers."

a. The cost associated with those contractors is $195/hour.
b. NW Natural does not have a current contract with those contractors.
c. With the addition of a Linux FTE Administrator, the Company did not budget any of those contracting costs in its workpapers; therefore, there were no such costs that needed to be removed from its workpapers.

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Request No.: UG 388 OPUC DR 184

184. In discussion with CAPO, CAPO states that the OLGA process is very manually intensive, which increases the administrative cost of doing business.
a. Do anticipated improvements in CIS include improvements in the OLGA process?
b. Please explain.

Response:

a. and b. The Company appreciates Staff bringing this matter to our attention. CIS replacement is not in a state of evaluation yet, and is not targeted to begin review until 2022 at the earliest. The Company will consider the OLGA process in its comprehensive review of its system.

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Request No.: UG 388 OPUC DR 185

185. Please provide third-party contracts, including cost information) on:
a. Data Center Migration and Modernization Project
b. Customer Order Management Project
c. Digital Portal Project
d. MS Office 365 E5
e. Please highlight these costs in work papers that demonstrates costs are accurately reconciled in NW Natural's UG 388 request.

Response:

Due to the large size of the files comprising the third-party contracts for the above-listed projects, those files are being provided on CDs marked confidential, and confidential lists of those files on the CDs that contain cost information are being provided electronically.

a. The third-party contracts for the Data Center Migration and Modernization Project are being submitted on CD as Confidential UG 388 OPUC DR 185 Attachment 2. A list of those files on the CD that contain cost information is provided as Confidential UG 388 OPUC DR 185 Attachment 1.

b. The third-party contracts for the Customer Order Management Project are being submitted on CD as Confidential UG 388 OPUC DR 185 Attachment 4. A list of those files on the CD that contain cost information is provided as Confidential UG 388 OPUC DR 185 Attachment 3.

c. The third-party contracts for the Digital Portal Project are being submitted on CD as Confidential UG 388 OPUC DR 185 Attachment 6. A list of those files on the CD that contain cost information is provided as Confidential UG 388 OPUC DR 185 Attachment 5.

d. The third-party contracts for the MS Office 365 E5 Project are being submitted on CD as Confidential UG 388 OPUC DR 185 Attachment 8. This is an incremental O&M addition to our existing Microsoft Enterprise Agreement. The purchase will be effective September 1, 2020 at contract renewal for the existing Microsoft Enterprise Agreement.

The file that contains cost information is provided as Confidential UG 388 OPUC DR 185 Attachment 7.

e. The projects included in items a, b, and c above were included in gross plant in the rate case as projected additions. For items a through c, please see response to DR 134 and filed workpaper named "UG 388 – Exh. 1000 – WP2 – Gross Plant, Accum Deprec and Deprec Exp – CONFIDENTIAL." The response to DR 134 included major capital projects included in gross plant in revenue requirement. The workpaper shows how additions to plant are added to gross plant, that is then included in rate base, which is used to develop revenue requirement (see tab "Exhibit 1012 – Rate Base & Dep" of the workpaper named "UG 388 – Exh. 1000 – WP1 – Revenue Requirements Model – CONFIDENTIAL."

Data Center Migration and Modernization Project – The project is shown on rows 15 and 16 in the excel file provided in response to DR 134. That presentation shows that there are amounts attributable to FERC plant accounts 391.2 Computers and 303.1 Computer Software, and that the project is expected to go into service in March 2020. In the WP2 excel file, on the additions tab, cells Q8 (Oregon) and Q112 (Washington) show the total adds to the 303.1 account and cells Q92 (Oregon) and Q135 (Washington) show the total adds to the 391.2 account for March 2020. This project is a component of all adds to those accounts for March 2020.

Customer Order Management Project - The project is shown on row 6 in the excel file provided in response to DR 134. That presentation shows that the project is to be classified as FERC plant account 303.1 Computer Software, and that the project is expected to go into service in June 2020. In the WP2 excel file, on the additions tab, cells T8 (Oregon) and T112 (Washington) show the total adds to the 303.1 account for June 2020, of which this project is a component.

Digital Portal Project - The project is shown on row 19 in the excel file provided in response to DR 134. That presentation shows that the project is to be classified as FERC plant account 303.1 Computer Software, and that the project is expected to go into service in September 2020. In the WP2 excel file, on the additions tab, cells W8 (Oregon) and W112 (Washington) show the total adds to the 303.1 account for September 2020, of which this project is a component.

MS Office 365 E5 Project – This project is classified as O&M, and is a component of the $3.6 million IT&S O&M increase discussed in NW Natural/900 Page 14.

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Request No.: UG 388 OPUC DR 265

265. Regarding Company IT&S staffing discussed in testimony (Downing, 600/15-16), please provide:

a. The industry average ratio of IT&S FTE to overall company FTE for mid-size utilities.

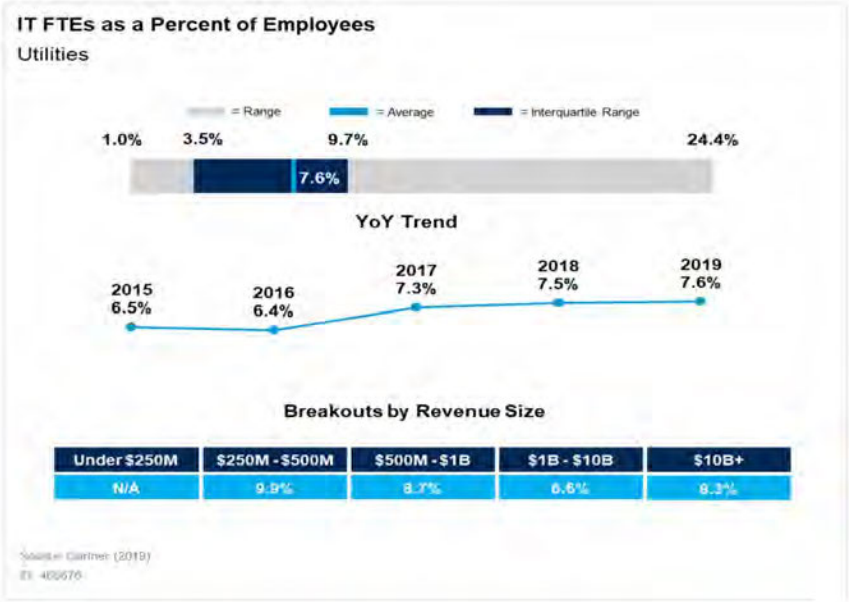
b. Documentation supporting the industry average provided in (a) above.

c. The full 2019 Transportation Security Administration (TSA) report "that reviewed the Company's overall security protocols and practices."

Response:

a. The industry average for utilities our size ($500M - $1B) is 8.7%.

b. Please see the table from Gartner, below.



c. The 2019 Transportation Security Administration (TSA) report is highly sensitive and password protected. The TSA report may be viewed in-person at the Company's Portland office, upon request.

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Request No.: UG 388 OPUC DR 266

266. Did Company IT&S staff receive overtime (OT) compensation on a recurring basis in 2018 and/or 2019? If yes, please provide:

a. The number of IT&S employees that received recurring OT compensation.

b. The position name/description for each IT&S employee receiving recurring OT compensation.

c. The total dollar amount of OT compensation paid to IT&S staff in 2018 and 2019.

d. A brief narrative describing the primary driver(s) for IT&S OT compensation. Please note if activities related to the various non Horizon IT projects described in testimony (Downing, 600) contributed to recurring OT pay.

Response:

No, the Company's IT&S staff all are salaried and receive no overtime compensation.

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Data Request Response

Request No.: UG 388 OPUC DR 267

267. Regarding the Skype Administrator position discussed in testimony (Downing, 600/20), it is Staff's understanding that Microsoft will retire Skype for Business in 2021. With the Company's plan to upgrade to Microsoft Office 365 E5, which includes Microsoft Teams, please provide a detailed narrative explaining why a dedicated Skype Administrator is needed.

Response:

There are two Skype For Business 2019 products: On-line and On-Premises. Skype For Business 2019 On-Line is end of life on July 31, 2021. Skype For Business 2019 On-Premises is end of life on October 14, 2025. NW Natural has deployed the On-Premises version of Skype For Business. Regardless of whether the communications and collaboration platform is Skype or Teams, there is a need for a dedicated resource to administer the system, maintain the service, monitor and troubleshoot.

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Data Request Response

Request No.: UG 388 OPUC DR 268

268. Regarding the data center migration and modernization project discussed in testimony, please provide:

a. All relevant workpapers and supporting documents used to determine the migration project costs depicted in Table 2 (Downing, 600/28).

b. Please confirm the price point for this project in the Company's revenue requirement calculation. Table 2 (Downing, 600/28) shows a breakout of costs totaling $10.2 million, whereas the testimony narrative states the total project cost is $11.0 million (Downing, 600/25 at 18).

c. Documentation showing the three physical data centers (Sherwood/Bend/250 Taylor) represents the least cost solution for the Company's data center migration (i.e. cost/benefit analyses, RFI submissions, RFP results, consultant reports, etc.)

d. The timeline for the data center migration project, to include initial design work, project commencement, major milestones, and the current projected completion date.

e. A detailed narrative that explains and quantifies how the "short window of time available to complete the work" (Downing, 600/29 at 7) increased labor expense for the project.

f. The Board approved budget for this project.

g. The current budget tracking and/or project management document(s)/report(s) used to monitor and compare project expenditures against approved budgeted amounts. For budget line item discrepancies of 10 percent or more, please include a detailed narrative of the cause(s) driving the discrepancy and what steps the Company has taken to manage project costs.

Response:

a. The total budget for the Data Center Migration and Modernization Project is $12,113,854 (excludes COH). This budget is supported by the following documents: (i) the "Updated Total Project Cost Information" section on the project planning sign off document (UG 388 OPUC DR 268 Attachment 1); (ii) the monthly budgets for the project shown on the cost summary tab of the attached project budget workbooks UG 388 OPUC DR 272 Attachment 2 (the planning budget), and UG 388 OPUC DR 272 Attachment 3 (the execution budget); and (iii) early purchase 1 and 2, UG 388 OPUC DR 268 Attachments 4-5 respectively, which represent adjustments to overall budget ask.

b. The price point for this project in the Company's revenue requirement calculation is confirmed. The total project cost of approximately $11.0 million includes construction overhead (COH), which is not included in the breakout of costs totaling $10.2 million in Table 2 (Downing, 600/28).

c. Please see UG 388 OPUC DR 268 Attachment 6 and 6a for a financial analysis and updated financial analysis for the data center migration and modernization project. Additionally, a study was performed by Open Spectrum in October 2017 (Confidential UG 388 OPUC DR 268 Attachment 7 and Confidential UG 388 OPUC DR 268 Attachment 8, which was contracted to perform due diligence related to the data center move in 2019-2020. Five co-location vendors in the state of Oregon were reviewed. The vendor located in Bend, Oregon proved to be least expensive, while providing the added benefit of additional protection from a Cascadia Subduction Zone seismic event. In further analysis, on Bend data center options, there were two viable vendors at comparable costs. After financial risk analysis of both companies, one was determined to be high risk for a long-term investment. One Neck was determined to meet all the requirements for NW Natural. Please see Confidential UG 388 OPUC DR 268 Attachment 9 for One Neck proposal.

d. The timeline for the Data Center Migration and Modernization Project follows:

Task	Target Start Date	Target End Date
Initiation Stage	1/9/2019	5/2/2019
Alternative Analysis	1/9/2019	2/11/2019
Project Request Memo	4/15/2019	5/2/2019
Defining Stage	5/3/2019	5/15/2019
Project Charter	5/3/2019	5/6/2019
Project Start	5/6/2019	5/15/2019
Planning Stage	5/15/2019	9/13/2019
Requirements	5/15/2019	8/30/2019
Design	5/15/2019	8/30/2019
Planning Sign Off	9/5/2019	9/13/2019
Execution Stage	9/13/2019	5/8/2020
Development	9/13/2019	3/20/2020
Testing	10/14/2019	4/3/2020
Deployment – Go Live	11/18/2019	5/8/2020
Closeout Stage	5/11/2020	5/29/2020
Project Close Out	5/11/2020	5/29/2020

e. Moving servers from one data center to another and reconfiguring them, so they are fully operational in the new location is a complex process. As described in Mr. Downing's testimony, the modernization effort did require more work than

initially anticipated. NW Natural engaged experts in data center transformation to perform a survey of the “as is” infrastructure, networking, and application servers. Working with the IT&S Applications group, they will confirm the environment, identify inter-dependencies, consult business stakeholders, create user acceptance testing, perform runbook documentation reviews, and finally schedule the event for time slots when it will affect both the business and our customers the least. These activities then repeat for the 100+ application stacks identified within the NW Natural data centers. Because of the increased complexity, there were increased labor needs to complete the project by the date our lease expired at OPS.

f. The Board does not approve individual project capital spend, but does approve a total capital spend inclusive of all projects. This project budget reflects the amount included in the total capital budget that was approved by the Board.

g. The monthly actuals report is used to monitor and compare project expenditures with approved budgeted amounts. Please see UG 388 OPUC DR 268 Attachment 10 for the project monthly actuals report. For the budget line items in the planning phase, variances of 10 percent or more were related to a shift from internal to external labor due to internal resource constraints. The project is targeted to closeout May 2020 and is expected to complete within authorized spend. The variances of 10 percent or more are due to work that has not yet been performed, since the projects is still underway.

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Request No.: UG 388 OPUC DR 269

269. Will the Sherwood/Bend/250 Taylor data center locations use a common internet service provider (ISP)? If yes:

a. How resilient is the ISP's data network to the three data center locations?

b. Will the ISP be able to maintain the Company's connectivity in the event of a catastrophic event (i.e. major earthquake, wide spread power outage, etc.)?

Response:

No, the Sherwood/Bend/250 Taylor data center locations will not use a common ISP. They will use the following diverse ISPs:

Bend – Zayo

Sherwood – Verizon

250 Taylor – Comcast

We also will utilize diverse transport to interconnect these three locations, as follows:

Bend – 250 Taylor: CenturyLink 10G wave

250 Taylor – Sherwood: Comcast 10G EPL

Sherwood – Bend: LS Networks 10G wave

We have configured routing to dynamically shift traffic, as needed, in the event of an ISP and/or transport provider failure.

a. & b. Not Applicable.

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Request No.: UG 388 OPUC DR 270

270. Please provide a breakout of the specific COM project cost categories using the same format used in Table 2 (Downing, 600/28).

Response:

The following is a breakout of the specific COM project cost categories using the same format used in Table 2 (Downing, 600/28):

Category	Cost
Labor	$11.5 million
Software	$212 thousand
Travel	$162 thousand

The total project cost of approximately $13.5 million (Downing, 600/35 at 11) includes construction overhead (COH), which is not included in the breakout of costs totaling $11.874 million in the above table.

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Request No.: UG 388 OPUC DR 271

271. Based on the industry standard price range of $6 million to $15 million for software upgrades similar to this project referenced in testimony (Downing, 600/30 at 10), is software available at the lower end of the price range that meets the core needs for this project? If yes, why wasn't the lower cost option selected?

Response:

No. There was no software available at the lower end of the price range that meets the core needs of the COM project.

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Request No.: UG 388 OPUC DR 272

272. Regarding the Com project discussed in testimony (Downing, 600/29-35), please provide:

a. A narrative description of the process the Company used to select the vendor(s) for this project (e.g. RFP, competitive bid system, direct business solicitation, consultant recommendation, etc.).

b. A list of the project bidders, to include a summary of each bidder's proposed solution(s), and the individual bid prices for this project.

c. All relevant workpapers and supporting documents used to determine the COM project costs.

d. The timeline for the COM project, to include initial design work, project commencement, major milestones, and the current projected completion date.

e. The Board approved budget for this project.

f. The current budget tracking and/or project management document(s)/report(s) used to monitor and compare project expenditures against approved budgeted amounts. For budget line item discrepancies of 10 percent or more, please include a detailed narrative of the cause(s) driving the discrepancy and what steps the Company has taken to manage project costs.

Response:

a. The Company followed our Expenditure Authorization Process for the COM project.

   Our company Expenditure Authorization Policy requires that purchases over $100,000 are competitively bid and that exceptions may be made with proper documentation.

   - For competitive bids, Purchasing works with the Project Management Office (PMO) and Business Units to solicit proposals either via Request for Proposals (RFPs) or Request for Quotes (RFQs), evaluate proposals and make vendor selections.
   - Exceptions for single source authorizations are obtained and documented using our Single/Sole Source Justification (SSJ) form.

b. Please see the mailed CD containing Confidential UG 388 OPUC DR 272 Attachment 1 for a list of the project bidders the documents supporting their proposed solution, and Confidential UG 388 OPUC DR 272 Attachment 1a for a summary.

c. The total budget for the COM Project is $11,836,578 (excludes COH). This budget is supported by the following documents (i) the "Updated Total Project Cost Information" section on the project planning sign off document UG 388 OPUC DR 272 Attachment 2; (ii) the monthly budgets shown on the cost summary tab of the attached project budget workbooks, UG 388 OPUC DR 272 Attachment 3 (the planning budget) and UG 388 OPUC DR 272 Attachment 4 and UG 388 OPUC DR 272 Attachment 4a (the execution budgets); and (iii) the change orders, UG 388 OPUC DR 272 Attachments 5-10, which are adjustments to overall budget ask.

d. The timeline for the COM project follows:

Task	Target Start Date	Target End Date
Initiation Stage	5/25/2015	6/30/2015
Alternative Analysis	5/25/2015	6/7/2015
Project Request Memo	6/30/2015	6/30/2015
Defining Stage	6/30/2015	2/25/2016
Project Charter	2/25/2016	2/25/2016
Project Start	2/25/2016	2/25/2016
Planning Stage	2/25/2016	12/31/2018
Requirements	2/25/2016	12/31/2018
Design	2/25/2016	12/31/2018
Planning Sign Off	12/31/2018	12/31/2018
AA Version 2 Stage	3/28/2018	12/5/2018
Alternative Analysis	3/28/2018	12/5/2018
Project Request Memo	11/28/2018	11/28/2018
Execution Stage	1/1/2019	5/31/2020
Development	1/1/2019	4/30/2020

Testing	6/24/2019	5/15/2020
Training	11/12/2019	3/13/2020
Deployment – Go Live	3/13/2020	3/15/2020
Closeout Stage	6/1/2020	6/30/2020
Project Close Out	6/1/2020	6/30/2020

e. The Board does not approve individual project capital spend, but does approve a total capital spend inclusive of all projects. This project budget reflects the amount included in the total capital budget that was approved by the Board.

f. The monthly actuals report is used to monitor and compare project expenditures with approved budgeted amounts. Please see UG 388 OPUC DR 272 Attachment 11 for the project monthly actuals report. For the budget line items in the planning phases, variances of 10 percent or more were due to external resources hours being lower than estimated; however, the overall Planning phase completed with a variance of 7 percent. The project is targeted to closeout June 2020 and is expected to complete within authorized spend. The variances of 10 percent or more are due to work that has not yet been performed, since the projects is still underway.

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Request No.: UG 388 OPUC DR 273

273. Please provide a breakout of the specific Digital Portal project cost categories using the same format used in Table 2 (Downing, 600/28).

Response:

The following is a breakout of the specific Digital Portal project cost categories using the same format used in Table 2 (Downing, 600/28).

Category	**Cost**
Cyber Security	Labor Only – included in below
Load Balancing	N/A
Network	$25 thousand
Server	N/A
Storage	N/A
Software	$646 thousand
Labor	$9.5 million

The total project cost of approximately $11.5 million (Downing, 600/49 at 7) includes construction overhead (COH), which is not included in the breakout of costs totaling $10.171 million in the above table.

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Request No.: UG 388 OPUC DR 274

274. For 2018 and 2019, on a monthly basis, please provide:
a. A summary of outside party web traffic visiting the Company's website.
b. A breakout of monthly web traffic activity (i.e. online bill pay, requests for service(s), general customer service inquiries, etc.).
c. The number of specific customer complaints regarding the current website (i.e. slow speeds, unable to find specific content, accessibility via mobile devices, etc.)

Response:

a. Please see UG 388 OPUC DR 274 Attachment 1-2 for files showing outside web traffic to nwnatural.com by month for 2018 and 2019.

b. Below is a list of the top 29 customer self-service features where monthly web traffic is supplied for 2018 and 2019. Please see UG 388 OPUC DR 274 Attachment 3 for the monthly web traffic.

Account Dashboard [/AccountDashboard]

View Recent Bill [/Billing/RecentBill]

Account History [/AccountDashboard/AccountHistory]

Usage History [/Billing/ChartHistory]

Payments by Check [/Payment/PayByCheck]

Payments by Credit/Debit Card [/Payment/PayByCreditCard]

Payments by Quick Pay [/QuickPay]

Auto Pay Enrollments [/AutoPay]

Paperless Enrollments [/Paperless]

Equal Pay Enrollments [/EqualPay]

Payment Due Date Extensions [/Payment/ExtendDueDate]

Equipment Inspections [/inspection]

Equipment Tune Up [/CustomerService/EquipmentServices/EquipmentTuneUp]

Start Service Residential [/ServiceStart/Start]

Start Service Business
[/CustomerService/StartStopMove/StartServiceForBusiness

Stop Service Orders [/ServiceStop]

Move service [/ServiceMove/Move]

Contact Us by Email [/ContactUs]

Payment program – Level Pay
[/CustomerService/PayYourBill/PaymentPlans/LevelPay]

Payement programs – Current Bill Plus
[/CustomerService/PayYourBill/PaymentPlans/CurrentBillPlus]

Find a Contractor [/CustomerService/EquipmentServices/FindAContractor] and [/ConnectToGas/FindAContractor]

System Status [/GasTransportation/Status]

Smart Energy Residential
[/Residential/SmartEnergy/WhatYouCanDo/EnrollInSmartEnergy/SmartEnergyForYourHome]

Smart Energy Business
[/Residential/SmartEnergy/WhatYouCanDo/EnrollInSmartEnergy/SmartEnergyForYourBusiness

Update Email and Password [/Profile/Edit]

Add/Remove Accounts [/Profile/Accounts]

Manage Bank Accounts [/Payment/PaymentAccounts]

Update Mailing Address and Phone Number [/ChangeAccountInformation]

Bill Payment Assistance
[/CustomerService/PayYourBill/BillPaymentAssistance/LowIncomeAssistance]

c. NW Natural's Customer Information System (CIS) is not equipped to report on customer issues or complaints by subject matter. However, as stated in testimony (Downing, 600/42 at 3-7), a NW Natural website survey revealed that 50 percent of customers were not satisfied with the mobile experience offered by the current website. For a further discussion of the reasons why NW Natural is replacing its existing website, please see Downing, 600/35-49.

Specific data that can be reported is derived from the Company's ongoing phone and online Customer Satisfaction Survey. Below reflects the total number of complaints for website topics such as could not complete a task, frustrations, could not find information, poor performance and not user friendly.

2018 – 50 complaints
2019 – 58 complaints

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Request No.: UG 388 OPUC DR 275

275. Regarding the Digital Portal project discussed in testimony (Downing, 600/35-49), please provide:

a. A narrative description of the process the Company used to select the vendor(s) for this project (e.g. RFP, competitive bid system, direct business solicitation, consultant recommendation, etc.).

b. A list of the project bidders, to include a summary of each bidder's proposed solution(s), and the individual bid prices for this project.

c. A list of the project bidders, to include a summary of each bidder's proposed solution(s), and the individual bid prices for this project.

d. All relevant workpapers and supporting documents used to determine the COM project costs.

e. The timeline for the COM project, to include initial design work, project commencement, major milestones, and the current projected completion date.

f. The Board approved budget for this project.

h. The current budget tracking and/or project management document(s)/report(s) used to monitor and compare project expenditures against approved budgeted amounts. For budget line item discrepancies of 10 percent or more, please include a detailed narrative of the cause(s) driving the discrepancy and what steps the Company has taken to manage project costs.

Response:

There are two references to "the COM project" in this data request that the Company, based on the call of this request, is interpreting to mean "the Digital Portal project."

a. The Company followed our Expenditure Authorization Process for the Digital Portal Project.

   Our company Expenditure Authorization Policy requires that purchases over $100,000 are competitively bid and that exceptions may be made with proper documentation.

- For competitive bids, Purchasing works with the Project Management Office (PMO) and Business Units to solicit proposals either via Request for Proposals (RFPs) or Request for Quotes (RFQs), evaluate proposals and make vendor selections.
- Exceptions for single source authorizations are obtained and documented using our Single/Sole Source Justification (SSJ) form. Please see Downing, 600/46 for the narrative description of the process the Company used to select the vendors for this project.

a. Please see the mailed CD containing Confidential UG 388 OPUC DR 275 Attachment 1 for the documentation for the project bidders, and Confidential UG 388 OPUC DR 275 Attachment 1a for a list of the project bidders, including a summary of each bidder's proposed solution(s) and the individual bid prices for this project. Contracts for the selected bidders can be found in response to UG 388 OPUC DR 185.

b. Parts "b" and "c" in UG 388 OPUC DR 275 are the same request.

c. The total budget for the Digital Portal Project is $10,160,511 (excludes COH). This budget is supported by the following documents: (i) the "Updated Total Project Cost Information" section on the project planning sign off documents UG 388 OPUC DR 272 Attachments 2-4; (ii) the monthly budgets shown on the cost summary tab of the attached project budget workbooks UG 388 OPUC DR 272 Attachment 5 (the planning budget)and UG 388 OPUC DR 272 Attachments 6-8a (the execution budget ask); and (iii) change orders, UG 388 OPUC DR 272 Attachments 9-13a, which are adjustments to overall budget ask.

d. The timeline for the Digital Portal project follows:

Task	Target Start Date	Target End Date
Initiation Stage	9/9/2016	7/4/2017
Alternative Analysis	9/9/2016	5/3/2017
Project Request Memo	4/21/2017	7/24/2017
Defining Stage	5/2/2017	6/14/2017
Project Charter	5/2/2017	6/14/2017
Project Start	5/2/2017	6/14/2017
Planning Stage	6/14/2017	7/5/2018
Requirements	7/1/2017	5/31/2018

Design	3/1/2018	7/31/2018
Planning Sign Off	6/20/2018	7/5/2018
Execution Stage	7/5/2018	6/30/2020
Development	7/12/2018	3/27/2020
Testing	8/1/2018	5/31/2020
Training	5/1/200	5/31/2020
Deployment – Go Live	6/27/2020	6/30/2020
Closeout Stage	7/1/2020	7/31/2020
Project Close Out	7/1/2020	7/31/2020

e. The Board does not approve individual project capital spend, but does approve a total capital spend inclusive of all projects. This project budget reflects the amount included in the total capital budget that was approved by the Board.

f. UG 388 OPUC DR 275 does not contain a part “g.”

g. The monthly actuals report is used to monitor and compare project expenditures with approved budgeted amounts. Please see UG 388 OPUC DR 275 Attachment 14 for the project monthly actuals report. For the budget line items in the planning phase, there we no variances of 10 percent or more. The project is targeted to closeout July 2020 and is expected to complete within authorized spend. The variances of 10 percent or more are due to work that has not yet been performed, since the projects is still underway.

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Request No.: UG 388 OPUC DR 276

276. Regarding testimony concerning the Digital Portal's cost saving to customers, (Downing, 600/44 at 9-10), please provide:

a. A narrative description of how the increased costs associated with the project will save customers money.

b. Please provide examples of how each customer class will benefit monetarily from this project.

c. Any supporting workpapers, studies, or research materials that illustrates customer cost savings. In particular, please highlight the net financial benefit for customers after considering the $11.5 million capital investment (Downing, 600/49 at 7) for this project.

Response:

a – c. NW Natural believes in providing high quality customer service while meeting customers' needs as they evolve. As stated in testimony, the main reasons for replacing the existing website are to improve on ten-year-old technology that is out-of-date and must be updated to meet today's data security standards and to accommodate rapidly evolving mobile capabilities needed to meet customer self-services requirements. Without this project, we will not have the ability to apply the latest in data security functionality to protect customer information or provide basic mobile self-service functionality and notifications. Indirect cost-saving benefits to customers include enhanced cybersecurity, and removing technical barriers for mobile users to enable more participation in payment and financial assistance programs. Additionally, more customers will have access to money-saving information such as energy saving tips and programs and incentives for high-efficiency equipment that saves energy and money (see, e.g., NW Natural/600/Downing/Page 42/Lines 18-19).

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Request No.: UG 388 OPUC DR 277

277. Regarding the Office 365 project discussed in testimony (Downing, 600/49-51), please provide:

a. All relevant workpapers and supporting documents used to determine the project cost.

b. The number of employees covered by the annual subscription fee.

c. A narrative description of the discount(s) received (if any) for upgrading from MS Office 2019 to MS Office 365.

Response:

a. Please see attached file UG 388 OPUC DR 277 Attachment 1.

b. As of November 14, 2019, there are approximately 1,168 employees and 210 contractors covered by the annual subscription fee.

c. The budgetary quote previously provided does not contain any discounts or credits. NW Natural has not begun negotiating the new Microsoft Enterprise Agreement, so it is not known at this time if a discount(s) will be received for upgrading from MS Office 2019 to MS Office 365.

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Request No.: UG 388 OPUC DR 278

278. Regarding the $1.2 million in Skype for Business project expenditures in the Company's response to DR 134:

a. It is Staff's understanding that Microsoft will retire Skype for Business in 2021. With the Company's plan to upgrade to MS Office 365 planned for mid-2020, to include Microsoft Teams, please provide a detailed narrative as to why the Skype for Business software purchase is necessary.

b. Over what period of time will the Skype for Business software be depreciated?

Response:

a. There are two Skype for Business 2019 products: online and on-premises. The Skype for Business 2019 online end of life date is July 31, 2021. The Skype for Business 2019 on-premises end of life date is October 14, 2025. NW Natural has deployed the on-premises version of Skype for Business.

Skype was selected because it is part of our overall IT&S strategy, and based on the following factors: compatibility, reliability, and achievability.

i. **Strategic Plan**: NWN needed to transition from Avaya to a new phone system. Skype and Teams are essentially the same solution: One is on-premises and one is cloud-based. The majority of the cost in the Skype for Business project is labor and the technology to migrate us from our legacy voice solution. The majority of the investment for Skype (or Teams) is associated with compatible headsets, desk phones, and conferencing equipment; all of which are all required for either solution. The selection of Skype For Business for NWN is a logical upgrade path given the state of our existing infrastructure. There is no overlap in purchases between Skype for Business and Microsoft 365. The strategic path from Skype -> Office 365 -> Teams is a risk-adverse approach, and aligned to our IT&S strategy.

ii. **Compatibility**: When the Skype For Business project was initiated, NW Natural suffered from significant technical debt with its phone systems. The existing phone system (Avaya) was two major releases behind. Additionally, Avaya was in bankruptcy, which created more uncertainty about Avaya's ability to serve our business needs. The decision to move forward with Skype for Business 2019 was recommended by several partners (specifically: Enabling Technologies, PCM, and Insight) on the basis that it would give us expanded functionality and yet still be compatible with our other on-premises services: Exchange, SharePoint, and our Call Center solution.

Reliability: Our IT&S environment is risk-adverse. Our Call Center takes over 1MM calls/year. Microsoft Teams only achieved feature parity with Skype in mid-2018. The on-premises Skype For Business solution for voice and collaboration was the least risk option when the project initiated (as opposed to Teams). For example, there was a global outage in February 2020 which affected every Teams user and company in the world for four hours. We expect that by the time Skype is end of life, Teams would be more mature and reliable.

iii. **Achievability**: The journey from our legacy communication and collaboration solution to Teams was determined to be too much of a complex migration and high in risk. The Skype option was considered to be thoughtful and achievable given our legacy architecture. We were not ready to fully integrate our phone systems with a full cloud suite through Microsoft Azure ecosystem (e.g., Azure AD, Multi-Factor Identification, Defender, etc.).

b. The Skype for Business software will be depreciated over 14.75 years, which is the depreciation rate authorized by the Commission for assets in FERC Account 303.1 (Computer Software).

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Rates & Regulatory Affairs
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2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 373

373. Regarding NW Natural's responses in DRs 268(b), 272(c), and 275(c) discussing COH, please provide:

a. A definition for "COH".

b. A detailed description explaining what COH is and how it applies to the cost(s) of the IT projects.

c. A detailed description of how COH was calculated in the above referenced DRs.

d. All supporting workpapers, with cell formulas intact, used to calculate and apportion COH to the IT projects.

Response:

a) Construction Overhead (COH) refers to the costs related to construction activities not attributed to specific projects or work orders.

b) Construction overhead refers to the costs related to construction activities not attributed to specific projects or work orders. Examples of construction costs included in construction overhead include engineering, operations, supervision, administrative and general office salaries, materials, and other expenses that cannot be directly charged to a project. Construction overhead is allocated to projects or work orders based upon the type of capital project. These costs are appropriately capitalized and added to rate base. In short, construction overhead costs are those costs that the Company incurs to support the capital infrastructure needed in order to run the natural gas utility.

The main categories of Construction Overhead include:

i) Payroll: The main category of construction overhead costs is payroll; this accounts for nearly 70 percent of the total. The administrative transfer is a component of construction overhead payroll costs. The administrative transfer allocates a portion of administrative employee costs, such as the salaries and expenses for Accounting, Human Resources, and general administration to capital. These costs are allocated from O&M to construction as indirect

construction overhead. These costs are charged to construction overhead because they cannot be charged directly to specific or individual projects.

ii) Non-Payroll Administrative Transfer: This category accounts for about 15 percent of the A&G costs charged to non-payroll O&M expense. Similar to the payroll administrative transfer described above, a portion of non-payroll administrative and general costs are transferred from O&M to construction activities.

iii) Materials: This category includes the costs of materials delivered to one of the Company's primary mains and services contractors (Loy Clark). When materials like pipe or fittings are issued, the Company does not know the specific capital work order or the precise amount of materials used on specific jobs, and as a result, the costs are appropriately charged to construction overhead. This category also includes the costs of materials that are not charged to individual capital work orders including the cost of grass seed, concrete, and minor parts.

iv) Contract work: This category includes the costs of goods and services provided by the Company's contractors when such costs cannot be specifically charged to individual capital work orders. Examples of the costs included in this category are the costs of flaggers, construction equipment and vehicle rental.

v) Other. This category includes relatively minor costs that are not categorized above (one percent of the total). Examples include permit fees and parking costs.

COH is applied to IT projects with a general rate representative of the indirect work supporting the execution of the project across these categories.

c) COH was calculated for the IT projects Customer Order Management, Digital Portal, and Data Center Migration and Modernization in the financial forecasting system UI Planner. The calculation in the system uses a table of COH rates specific to each type of work and then applies that rate to the direct cost of the project. The current rate used for IT projects is 8 percent. This rate is applied to the direct capital costs of the project.

d) See UG 388 OPUC DR 373 Attachment 1. Forecasted calculations of COH take place in the financial forecasting system UI planner; the attached file reproduces the calculation.

CASE: UG 388
WITNESS: BRIAN FJELDHEIM

PUBLIC UTILITY COMMISSION
OF
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STAFF EXHIBIT 306

Exhibits in Support
Of Opening Testimony

April 17, 2020

Staff Exhibit 306 is confidential

Subject to

Protective Order no: 19-437

CASE: UG 388
WITNESS: BRIAN FJELDHEIM

PUBLIC UTILITY COMMISSION
OF
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STAFF EXHIBIT 307

Exhibits in Support
Of Opening Testimony

April 17, 2020

Staff Exhibit 307 is confidential

Subject to

Protective Order no: 19-437

CASE: UG 388
WITNESS: BRIAN FJELDHEIM

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 308

Exhibits in Support
Of Opening Testimony

April 17, 2020

NW Natural®

Rates & Regulatory Affairs
UG 388
2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 173

173. In NWN's previous rate case (UG 344), certain data columns were provided in the Company's responses to SDR 057 that were not included in NWN's current rate case filing (UG 388 DR 057 Attachment 1, tab "Non Payroll Transaction"). Please provide Staff with a revised SDR 057 filing that includes the following:
a. Vendor name (UG 344 - DR 057 CONF Attachment 1 SUPP, Excel Col. U).
b. Cost Center name (UG 344 - DR 057 CONF Attachment 1 SUPP, Excel Col. E).
c. Internal transaction/order description (UG 344 - DR 057 CONF Attachment 1 SUPP, Excel Col. K).
d. Document type (UG 344 - DR 057 CONF Attachment 1 SUPP, Excel Col. O)
e. OR allocation ratio (UG 344 - DR 057 Supplemental Attachment 2, tab “SAP Data”, Excel Col. W).
f. OR allocated expenses (UG 344 - DR 057 Supplemental Attachment 2, tab “SAP Data”, Excel Col. Z).

Response:

Based on a call between the Company and Staff on January 23, 2020, the parties agreed that the Company provide Confidential UG 388 OPUC DR 173 Attachment 1. This attachment includes transaction level detail consistent with SDR 057 using actual data for 2019. Due to the transactional level detail, we are able to be more granular in our state allocation, versus summary level aggregation. For specifically identified updates, consistent with the sub-bullets in the question, see list below:

a. Column “AC” and “W”

b. Column “E”

c. Column “I”

d. Column “V”

e. Column “N”

f. Column “O”

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Request No.: UG 388 OPUC DR 174

174. In UG 344, the Company submitted a supplemental Excel file for SDR 057 titled "UG 344 OPUC DR 057 Supplemental Attachment 2 - OM State Allocation". Using 2019 expenditure data, please provide Staff with the same supplemental filing for this rate case.

Response:

Please find attached supplemental data titled "Confidential UG 388 OPUC DR 174 Attachment 1" for 2019 expenditures by FERC, Cost Center, and General Ledger Accounts. The allocation factors used is consistent with the rate case filing. The attachment excludes North Mist activities and other non-recoverable expenses.

Data provided is confidential and preliminary as the Company has not yet submitted the annual 10-K SEC filing.

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Request No.: UG 388 OPUC DR 175

175. Staff noted in the Excel file attachments for SDR 057 and 058 that there is a 50 character limit in the columns containing transaction descriptions. In the previous rate case, there did not appear to be a character restriction in the Excel files provided. Please re-submit the attachment Excel files for SDRs 057 and 058 without a character count restriction in the cells.

Response:

The Company is filing confidential supplements to SDR 58 Attachments1-2 to show 12 months of actual data for the Base Year (calendar year 2019). The Company's response to SDR 058 is only FERC level detail and, as such, doesn't provide data that are subjected to the 50-character limit. In the Company's response to SDR 057, the 50-character limit is the result of SAP limitations. The items identified by Staff are specific to our purchase card transactions where part of the business purpose may be cut off by that SAP character limitation. As such, we are providing for Staff's reference the purchase code upload files for the base year (calendar year 2019) that have the business purpose with no character limitation. Please see UG 388 OPUC DR 175 Attachment 1 and Confidential UG 388 OPUC DR 175 Attachment 2.

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Request No.: UG 388 OPUC DR 176

176. Regarding the financial data provided in SDR 058:
a. Does the nine months of transactional data provided in SDR 057 form the basis for the summary data plus forecast amounts reported in SDR 058 (UG 388 DR 058 Attachment 2, tab "Base year", columns B-H)? If yes, what methodology was used to forecast Q4, 2019 expenses for the individual accounts (annualized, trend, etc.)?
b. Please provide the Company's supporting file/document(s) illustrating the use of January-September 2019 actuals and the Company's forecast methodology applied for Q4, 2019 in an Excel file with cell formulas intact.

Response:

Based upon a conversation between the Company and Staff on January 23, 2020, the parties agreed that the Company may respond to this request by providing actual 2019 data in the same format as SDR 57 and SDR 58. For updated information in the same format as SDR 57, please see OPUC DR 173. For updated information in the same format as SDR 58, please see OPUC SDR 58 supplement.

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2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 376

376. Does the Company receive any cash back benefit or other financial incentive when using a PCard to make purchases? If yes, please provide:

a. A summary of the cash back percentage(s) amount for transactions (e.g. 1 percent for all purchase, 2 percent for fuel purchase, percentage discounts for preferred vendors).

b. The total cash back/financial incentive received in 2018 and 2019.

c. The projected Test Year cash back/financial incentive dollar amount.

d. Are these rewards shared with ratepayers?

Response:

376. Yes, the Company does receive a cash back benefit when using the Company P-card to make purchases.

a-b. UG 388 OPUC DR 376 Attachment 1, which is the statement covering the 2019 rebate year, summarizes the types of rebates. As shown in UG 388 OPUC DR 376 Attachment 1, the total cash back received on 2019 transactions and paid in 2020 was $29,247.84. The total cash back received on 2018 transactions and paid in 2019 was $29,204.44.

c. We have included a projected Test Year P-card rebate in the Test Year credit of $30,837. You can find this amount in OPUC DR 282 Attachment 1, tab Dept Non-Payroll Forecast, cell BD4079.

d. These rewards are returned 100% to the Company's customers.

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Rates & Regulatory Affairs
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2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 377

377. How are cash back/financial incentives recorded in the Company's accounting system?

Response:

The annual P-card cash rebate is charged to Cost Center 42010 – Accounting, Internal Order 921-01505, and Cost Element 502500 – Bank Charges. This cost center also houses the costs of the P-card administration and P-card mailing fees.

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Data Request Response

Request No.: UG 388 OPUC DR 378

378. Per discussions between NW Natural and Staff, regarding the supplemental attachment in OPUC DR 173, please describe the majority of Document Types in Excel column "T" and the process to include a business description.

Response:

The descriptions of the document types and the process to include a business description are summarized below:

- AB – Accounting Document Payroll System – Recorded by the Payroll Team - This document type relates to outgoing payments made via the HR Module initiated by our SAP time entry process, or the payroll process. The majority of these items relates to our Collective Bargaining Agreement for meal allowances, per diems, and business use of personal vehicles. These items come over from the CATS time recording component of the SAP Module. There is no opportunity for manual involvement to add additional business purpose descriptions.

- AF – Depreciation Postings – Recorded systematically by the Accounting Team – This document type relates to monthly depreciation expense postings and only one description comes over in the 'Document Header Text' and the description is systematically created when the SAP system program runs and posts depreciation. There is no opportunity for manual involvement to add additional business purpose descriptions.

- DR – Customer Invoice – Recorded by the Accounting AR Team – This document type relates to incoming invoices other than those related to customers which are recorded in CIS. The customer invoices are keyed in the AR Module by the AR Clerk. As the quantity of these invoices is low, the AR Clerk does key the business purpose in the 'name' field in SAP which does come over from the AR Module.

- KA – Vendor Document – Recorded by the AP Team – This document type relates to manual corrections/credits recorded by the AP Team through the AP Module against invoices. The items are recorded to SAP by selecting an invoice in the AP module before it has been paid and reversing/cancelling it when there

is an error identified in review after it is keyed. There is no opportunity for documenting anything manual for the reversal.

- KG – Vendor Credit Memo – Recorded by the AP Team – This document type relates to manual credit memos recorded by the AP Team through the AP Module against invoices usually after an invoice has been paid. They are recorded to SAP by keying the credit memo invoice in the AP module consistent with the KR keying process summarized below.

- KR– Vendor Invoice – Recorded by the AP Team - This document type relates to outgoing invoices through the AP Module that we refer to as "Direct Pay Invoices" as they do not go through the Purchasing process, and have no underlying POs. Vendor Invoices or Voucher Request Forms are used for paying items such as utilities, donations, P-cards, employee expense account reimbursements, dues and memberships, taxes, CAP program, and some professional services. They are manually keyed by AP clerks and the policy for the AP clerks is to manually key the invoice number, and any info requested by the payee to facilitate the payment only in the "text" field in SAP. Using a SAP standard action in our current version of SAP, when keying the invoices there is no other field the AP clerks can key into, and whatever gets keyed in that field also gets shared with the vendor along with the payment. AP receives the invoices for keying after they have been reviewed and approved, and approvers are familiar with or review and see the business purpose before approving the invoices for payment. Our current SAP configuration does not lend itself to additional invoice details added to SAP.

- RE – Invoice Receipt Differences – Recorded systematically – This document type relates to GR/IR invoice price or inventory quantity differences recorded systematically by SAP when the differences after processing an invoice are under a certain threshold. They are usually inventory differences or shipping/freight differences. They are recorded systematically and there is no opportunity for manual involvement to document a business description. These differences are usually under a dollar or 1% of the invoice total and are immaterial.

- SA – G/L Account Document – Recorded by the Accounting Team – Manual Posting – This document type relates to manual journal entry postings made by Accounting via the manual journal entry process in SAP. Manual Postings to O&M include amortization of prepaids, manual A/P accruals and reversals, vehicle costs, rents and leases, Azumano airfare, admin transfer, shared services, other transfers and reclasses including sales orders not sold. It is the process and policy for each line item of the manual journal entry to have a short explanation that posts to the "name" column in SAP, and the journal entry description posts to column "document header text" in SAP. It is our process that both descriptors are fairly short and succinct for SAP, and that further explanations are included on the journal entry itself. The journal entry is reviewed and approved before posting to SAP.

- WA – Goods Issued – Recorded by the Purchasing/Stores team - This document type relates to issuances to O&M from the materials & supplies inventory module. Upon issuance, there is one explanatory field (the 'name' field) that is used to describe the transaction that posts to the SAP general ledger from the M&S module, and that field is used to note the part number itself and the date and issuer. The M&S module has other fields with more detail, but those fields do not integrate to the general ledger module.

- WE – Goods Receipt – Recorded by the Purchasing/Stores team - This document type relates to costs recorded and invoices subsequently paid on Purchase Orders. The explanatory field that posts to the general ledger from the Supply Chain Management Module is the 'purchase order text' field. That field applies to the entire purchase order and, therefore, the explanation is provided at a higher level that is sufficiently broad to cover the entire purchase order. There are no other fields available for the AP clerks to add notations. The Purchase Order text is keyed at creation of the PO. Our current SAP configuration does not lend itself to additional PO invoice details added to SAP.

- WI – Inventory Document – Recorded by the Purchasing/Stores team – This document type relates to inventory count differences recorded to SAP and is done systematically after the Stores team selects an inventory type and notes the quantity of any inventory differences. There is no additional opportunity for manual documentation; the business purpose is designated in the unique GL account and internal order that are used for all of these items.

- Z1 – CIS Daily interface – SAP interface – This document type relates to charges and credits that are posted to SAP from CIS via the monthly SAP interface that come over with a short description in the name due to CIS character limits. There is no additional opportunity for manual documentation. Therefore, the business purpose is designated in the unique GL account, internal order, and offsetting account that are used for all of these items that clearly describe the business purpose, such as 'company gas use – measure and regulating expense – Firm'.

Page 10 and 11 of

Staff Exhibit 308 is confidential

CASE: UG 388
WITNESS: HEATHER COHEN

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 400

Opening Testimony

April 17, 2020

Q. Please state your name, occupation, and business address.

A. My name is Heather Cohen. I am a Senior Utility and Energy Analyst employed in the Energy Rates and Accounting Program of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE, Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. My witness qualification statement is found in Exhibit Staff/401.

Q. What is the purpose of your testimony?

A. I provide background, analysis and recommendations regarding Northwest Natural Gas Company's (NWN or Company) test year expense for wages, salary, incentives, and full-time equivalents and "uncollectibles."

Q. Did you prepare an exhibit for this docket?

A. Yes. I prepared workpapers and copies of Company responses to Staff data request. My exhibits include:

Exhibit Staff/402, NW Natural Response to Staff DR 279
Exhibit Staff/403, NW Natural Response to Staff DR 282
Exhibit Staff/404, NW Natural Response to SDR 93
Exhibit Staff/405, NW Natural Response to Staff DR 189
Exhibit Staff/406, Staff electronic workpaper, PUC 3-year W&S
Exhibit Staff/407, electronic workpaper, PUC Misc Labor
Exhibit Staff/408, NWN Responses to SDR 92, Staff DRs 161, 28, 281, 282
Exhibit Staff/409, NW Natural Response to Staff DR 162
Exhibit Staff/410, NW Natural Response to Staff DR 355
Exhibit Staff/411, NW Natural Response to SDR 92, Staff DR 110
Exhibit Staff/412, Staff electronic workpaper, PUC FTE per Customer
Exhibit Staff/413, NW Natural Response to SDR 110
Exhibit Staff/414 NW Response to SDR 94
Exhibit Staff/415, Staff electronic workpaper, PUC FTE
Exhibit Staff/416, NW Natural Response to SDR 63
Exhibit Staff/417, NW Natural Response to Staff DR 283
Exhibit Staff/418, Staff electronic workpaper, 3-year incentives

Exhibit Staff/419, NW Natural Response to Staff DR 361

Q. How is your testimony organized?

A. My testimony is organized as follows:

Issue 1. Uncollectible Expense 3
Issue 2. Wages, Salary, Incentives and Full-Time Equivalents..... 5

ISSUE 1. UNCOLLECTIBLE EXPENSE

Q. Please provide a summary of the Commission's historical treatment of uncollectible expense, the Company's filed proposal, and Staff's analysis of the issue.

A. The amount included in a utility's Revenue Requirement for uncollectible expense is revenue sensitive because it depends on the amount of forecasted revenue. The amount of uncollectible expense included in the Revenue Requirement is a function of the test year revenue and the uncollectible rate. The uncollectible rate is based on an average of the net-write offs, i.e., the uncollectible amounts that were written off the books, for the base year and preceding two years divided by the average of the revenues for those same years. The uncollectible rate that is derived from this three-year average methodology is then multiplied by the forecast of test year revenue to determine the test year uncollectible expense for a utility's Revenue Requirement.[1] In addition, Commission Staff reviews other materials to determine the reasonableness of the rate and level of expense produced by the three-year model.

[1] *See, e.g.*, *In the Matter of Avista Corporation*, UG 246, Order No. 14-015 at 3 (January 21, 2014); and *In the Matter of Avista Corporation*, UG 186, Order No. 09-422, Appendix A at 4 (October 26, 2009) (adopting stipulations for Avista general rate increase with uncollectible expense in revenue requirement based on three-year average); *but see In the Matter of Idaho Power Company*, UE 167, Order No. 05-871 (January 28, 2005) (adopting stipulation for Idaho Power Company general rate increase with uncollectible expense based on four-year average); and *In the Matter of Cascade Natural Gas Corporation*, UG 287, Order No. 15-412 (December 28, 2015) (adopting stipulation for Cascade Natural Gas general rate increase with uncollectible expense based on three-year average, removing an anomalous year).

Q. Please provide a summary of the Company's filed proposal and Staff's analysis of the issue.

A. The Company's proposal adheres to the three-year average methodology. The Company's witness, Mr. Walker, testifies, "The adjustment for Uncollectible Accrual for Gas Sales reflects the difference between the Base Year expense and the Test Year expense derived by taking the three-year historical average of write-offs as a percent of total revenues times Test Year sales revenue."[2] As shown in the Staff Exhibit 402, the Company utilized 2017, 2018, and 2019 based on an October 1 through September 30 time period, trending the three year rolling average of write-offs and revenues for that period. To review the reasonableness of the rate obtained by the three-year methodology, Staff requested the actual calendar data for 2014 through 2019.[3] After analyzing six years of write-offs as a percentage of total revenues, Staff found the Company's uncollectible rate of 0.097 percent to be reasonable compared to prior years.

Q. What is Staff's recommendation?

A. Based on Staff's analysis, Staff finds the Company reasonably forecasts its uncollectible rate for the test year. Because it is revenue sensitive, the overall adjustment will depend on other Staff proposed changes in test year revenues.

[2] NWN/1000, Walker/14-15.
[3] Staff/402, NW Natural Response to Staff DR No. 279.

ISSUE 2. WAGES, SALARY, INCENTIVES AND FULL-TIME EQUIVALENTS

Q. Please provide a summary of the Commission's historical treatment of wages and salaries.

A. The Commission has relied on Staff's three-year wage and salary (W&S) model to estimate payroll levels for energy utilities.[4] For non-union employees, the increases in payroll from the historic base year are tied to the rate of inflation using the All-Urban CPI.[5] For union employees, the increases in payroll from the historic base year are based on union contracts.

As a starting point, Staffs model uses the utility's actual average wage and salary levels as they existed three years prior to the test year. For non-union employees, Staff applies the annual changes to the All Urban CPI to adjust wages and salaries for each of the three subsequent years to establish a forecast of test-year wage and salary levels. Then, the sharing principle is applied wherein Staff allows the Company to share 50/50 the lesser of the difference between the projections or a 10 percent band around Staff's projection.

Staff repeats the same analysis for union employees, but escalates yearly wage increases negotiated wage increases as set forth in the union contract rather than the All-Urban CPI.[6]

[4] In the Matter of Northwest Natural, UG 132, Order No. 99-697 at 43 (November 12, 1999).
[5] See Order No. 01-787 at 40; In the Matter of Northwest Natural, OPUC Docket No. UG 132, Order No. 99-697 at 43 (November 12, 1999); *In the Matter of PGE*, OPUC Docket No. UE 102, Order No. 99-033 at 61 (January 27, 1999); *In the Matter of PGE*, OPUC Docket UE 88, Order No. 95-322 at 10 (March 29, 1995).
[6] See Order No. 99-697 at 43.

The W&S Model incorporates actual market-based data by using historic wages and adjusting for inflation using the All-Urban CPI index, providing employees the same real level of compensation in the base year while incentivizing companies to minimize labor costs.[7] Moreover, the All-Urban CPI captures local economic conditions as the Bureau of Labor Statistics includes Oregon prices in its survey.[8] Further, Staff's methodology of equally dividing the difference between the two payroll projections between ratepayers and shareholders also allows for some adjustments to reflect changes in market conditions without allowing unchecked escalation.[9]

Q. Please describe the Commission's treatment of "incentives" for ratemaking purposes.

In terms of incentives, Commission practice excludes 100 percent of officers' bonuses, which are typically based on increased earnings and other "financial, business, and corporate goals" that "primarily benefit shareholders."[10] Commission practice also excludes 75 percent of performance-based bonuses and 50 percent of merit-based bonuses for non-officers.[11] Staff considers performance-based bonuses to be based on the company's increased earnings and other financial metrics, therefore more beneficial to shareholders whereas merit-based bonuses are thought to provide equal benefit to

[7] See Order No. 99-697 at 43.
[8] See Order No. 99-697 at 43.
[9] Order No. 95-322 at 10.
[10] See Order No. 99-033 at 62, *In the Matter of the Application of US West*, UT 125, Order No. 97-171 at 74-76 (May 19, 1997).
[11] See e.g., Order No. 99-697 at 44-45.

shareholders and ratepayers.[12] Union bonuses are treated in the same manner as non-union bonuses.[13]

Q. Please summarize NWN's proposal for wages, salaries, incentives and overtime expense in this case.

A. On a Total Company basis, the Company's 2020-2021 test year includes $114.427 million in wages and salaries (base pay) and $7.225 million in overtime.[14] The Company has provided its incentive amounts in Oregon jurisdictional amounts, therefore there's no reason for Staff to reallocate it. The Oregon allocated test year labor expense is 89.3 percent of the Total Company labor expense.[15] According to testimony, the Company uses survey data to ensure its base pay is aligned with the median of the market for comparable jobs to attract qualified employees.[16]

Q. How do the Company's adjustments to salaries, wages and incentives differ from those Staff typically makes in a general rate case?

A. Staff explains the differences by each component of Staff's W&S Model below.

Escalation

Q. Please explain the Company's proposal regarding the escalation of base payroll.

A. As explained in Company testimony, non-union employees' base year (2019) pay was escalated by 4.00 percent in 2020 and 4.70 percent in 2021 to arrive

[12] See Order 99-697 at 44.
[13] See Order 99-697 at 44-45; Order 99-033 at 62.
[14] Staff/403, NW Natural Response to Staff DR 282
[15] Staff/404, NW Natural Response to SDR No. 93.
[16] NW Natural/700, Rogers/3.

at the test year base pay.[17] Within the increases is a 3.40 percent and 3.50 percent merit increase along with an additional 0.60 percent for promotions and equity adjustments.[18] Union employees receive a 1.5 percent increase in December 2019, and a 2 percent increase in June 2020.[19] For non-union employees, Staff escalated the wages and salaries from the 2018 historical base to the test year using the All-Urban CPI, consistent with the W&S model. Staff escalated union employees' salary by 1.50 percent, 2.00 percent, and 2.92 percent for 2019, 2020, and 2021, respectively, as specified in the union contract.[20] As previously mentioned, the wage and salary (W&S) model allows the Company to share 50/50 the lesser of the difference between the company's and Staff's calculated projections, or a 10 percent band around Staff's calculated projection. A total difference of $5.227 million was reduced to $2.613 million after the sharing principle was applied.[21] Staff then applied the 89.3 Oregon allocation percentage to calculate the total for the Oregon jurisdictional test year.

Q. What is Staff's recommendation regarding the escalation of salaries and wages to include in the 2021 test year?

A. Staff recommends reducing the test year salaries and wages by ($2.333) million allocated as ($1.480) million O&M expense and ($854.155) thousand

[17] NW Natural/700, Rogers/6.
[18] NW Natural/700, Rogers/5, NW Natural/700, Rogers/6.
[19] NW Natural/700, Rogers/6. See also Staff/405, NW Natural Response to Staff DR 189.
[20] Ibid.
[21] Staff/406, Staff electronic workpaper, NWN UG 388 W&S model CONF HBC, tab PUC 3-year W&S.

capital. Staff recommends reducing overtime by 1.371 million ($869 thousand O&M and $502 thousand capital). Finally, Staff advises small adjustments for payroll taxes and depreciation of ($340) thousand and ($142) thousand, respectively.[22]

FTEs

Q. Please provide the background for this issue.

A. The Company's 2021 test year includes 1,193 FTE on a total Company basis. This is an increase of 117.9 from 2016 to the test year and an increase of 75.5 from 2016 to base year 2019. Applying the Company's Oregon allocation results in an increase to Oregon of 105 FTEs from 2016 to test year and 67 from 2016 to base year 2019. There has been inconsistency in the Company's FTE counts in the Company's numerous responses to Staffs data requests.[23]

Q. Did the Company explain the increase in FTE from 2016 through 2019 in its testimony?

A. No. The Company explained the increase of 16 incremental FTEs from Base Year to Test Year as additional positions needed in Information Technology and Services (IT&S).[24] However, a larger analysis of the increase in FTEs from 2016 to test year or base year is missing. Moreover, in response to Staff DR 162, the Company explained it had added 83 new positions

[22] Staff/407, electronic workpaper, NWN UG 388 W&S model CONF HBC, PUC Misc Labor.
[23] Staff/408, NW Natural Responses to Staff DR 92 Attach 1, 92 Attach 1 Amended, 92 Attach 1 Amended Supplement; Staff DR 161, DR 161 Supplemental Response, DR 161 Supplemental Response 2; Staff DR 280, DR 280 Attach 1, Staff DR 281 Attach 1, and Staff DR 282.
[24] NW Natural/700, Rogers/27.

between 2016 and 2019 in the areas of construction, operations, project management and IT&S.[25] This does not match Staffs analysis, which finds an additional 117 from 2016 to test year and an additional 42-60 (Total Company vs. Oregon allocated) from base year to test year. Staff sent a data request asking for a complete breakdown of the 83 new positions. After analyzing Company's response, Staff found 27 of the 83 new positions to be vacant, 19 of which had not been filled since calendar year 2017 or prior.[26] The majority of vacant positions were in construction.[27]

Q. Please describe Staff's analysis of the Company's increase in FTE.

A. Staff analyzed the ratio of customers to FTE in the years 2016 to 2019 using Total System customers and Total System FTEs.[28] The number of customers per FTE averaged approximately 660. From 2016 to 2019, customers per FTE has decreased by two percent. Year over year percentage change in customers per FTE, with the exception of 2018-2019 that showed a one percent increase, has been negative.[29] From 2016 to 2019, the number of customers increased by approximately 36,000 or five percent on a Total Company basis.[30]

Q. What is Staff's recommendation regarding the number of FTE proposed for the test year?

[25] Staff/409, NW Natural Response to Staff DR 162.
[26] Staff /410, NW Natural Response to Staff DR 355.
[27] Ibid.
[28] Staff/411, NW Natural Response to SDR 92, NW Natural Response to DR 110.
[29] Staff/412, electronic workpaper, UG 388 NWN W&S model CONF HBC, tab PUC FTE per Customer.
[30] Staff/413, NW Natural Response to Staff DR 110.

A. Staff recommends eliminating the 27 persistent vacancies from the Test Year.[31] The majority (23) of these vacancies are union positions with titles of Construction 1 and Construction Intern.[32] The remaining four positions have titles (Marketing Account Manager, Economics Analyst, Resource Management Specialist and Customer Acquisition Services Consultant) which are classified as Non Bargaining Unit Salaried or Exempt.[33] After applying the Company's Oregon allocation amount of 89.3 percent, Staff quantified the cost of these FTEs at $1.975 million ($1.252 million O&M and $723 thousand capital).[34] The cost of medical benefits for the 27 FTE is an additional $408 thousand. This amount was derived by calculating the Total Company Medical and Dental cost per Total Company FTE ($15,129) and multiplying that times the 27 FTE.[35] In addition, Staff Witness Brian Fjeldheim has an additional adjustment to FTE expense not included here.

Q. Does Staff have additional recommendations regarding the test year level of FTE?

A. Yes. Staff recommends continued monitoring and evaluation of the Company's FTE levels during the rate case to determine whether the additional FTE the Company has included for new projects for 2020 and 2021 are actually hired and are necessary.

[31] Staff /410, NW Natural Response to Staff DR 355.
[32] Staff/414, NW Natural Response to SDR No. 94.
[33] Staff/403, NW Natural Response to Staff DR 282.
[34] Staff/415, electronic workpaper, UG 388 NWN W&S model CONF HBC, tab PUC FTE
[35] Staff/416, NW Natural Response to SDR No. 63 Att 1 Amended.

Incentives

Q. Please explain the Company's proposal regarding the inclusion of incentive pay in its Oregon jurisdictional test year.

A. The Company maintains that incentives are an important part of "competitive total compensation," which includes a combination of base pay, merit-based incentive pay (pay-at-risk), medical benefits and retirement benefits.[36] The Company considers pay-at-risk to be an important part of its costs that should be a recoverable component of a utility's revenue requirement.[37] NW Natural is seeking to recover $11.1 million of pay-at-risk on an Oregon jurisdictional basis.[38]

The Company offers a "Goals Incentive Program" to its non-bargaining, non-officer employees. This program rewards employees who achieve or exceed their annual performance objectives.[39] Historically, bargaining employees were eligible for the "Key Goals Program" which linked compensation to achievement of Company goals. However, this program was eliminated, and money allocated for the program moved to base pay. Test year base pay for bargaining employees includes this adjustment as do the new collective bargaining rates.[40]

Finally, the Company's officers' incentive plans include both short-term and long-term incentive plans. These short-term plans are based 50 percent on the

[36] NW Natural/700, Rogers/2.
[37] NW Natural/700, Rogers/14.
[38] NW Natural/700, Rogers/17.
[39] NW Natural/700, Rogers/9.
[40] NW Natural/700, Rogers/9-10.

Company's performance, 20 percent on operational goals, and 30 percent on the individual officer's performance.[41] The long-term incentive programs, which applies to "to select, high performing managers, officers, and key employees," are comprised of Restricted Stock Units (RSUs) and performance shares.[42] RSUs are stock units that vest over time if certain performance thresholds are met while Performance Shares are a promise of Company stock earned only if NW Natural achieves certain goals during a three-year cycle.[43] Officers receive 35 percent of their incentive in the form of RSU and the remainder in the form of Performance Shares.

Q. Did Staff review incentives as a component of total compensation?

A. Staff reviewed the Pay Governance and NW Natural Market Review 2019 provided by the Company. Pay Governance analyzes officer compensation while the NW Natural Market Review reviews base pay midpoints for non-bargaining unit employees. Staff finds compensation to be within median market levels.

Q. What is Staff's position regarding the level of incentives included in the test year?

A. Commission practice typically excludes 100 percent of officers' bonuses, 50 percent of non-officer incentives if they are based on non-financial metrics and 75 percent of non-officer incentives if they are based on financial performance

[41] NWN/700 Rogers at 10; Staff/417, NW Natural Response to Staff DR 283.
[42] NWN/700 Rogers/12.
[43] Ibid.

measures.[44] Performance-based incentives, often connected to increased earnings, are thought to bring more benefit to shareholders while merit-based bonuses benefit both shareholders and ratepayers. Union bonuses are treated in the same manner as non-union bonuses.[45] The Commission's policy recognizes that while officers' incentives depend on meeting shareholder expectations, rewarding non-officers could benefit customers and shareholders alike.[46]

Q. Does the Company object to the Commission's incentive policy?

A. Yes. The Company believes the Commission should alter its policy and allow the Company to recover all of its Oregon allocated test year incentives (a total of $11.01 million) in rates.[47]

Q. Please summarize Company's perspective regarding the Commission's incentive policy?

A. The Company regards incentives as part of "the cost of operating the utility business" as well as a part of the competitive total compensation necessary for "a utility to prudently operate its business."[48] The Company argues that pay-at-risk is a standard industry practice that does not result compensation above the mean.[49] Accordingly, the Commission's approach of disallowing incentives relies too heavily on the fact that shareholders may also benefit and that good

[44] See Order No. 99-033 at 62; *In the Matter of the Application of US West*, UT 125, Order No. 97-171 at 74-76 (May 19, 1997).
[45] See Order No. 99-697 at 44-45; Order No. 99-033 at 62.
[46] UG 344 Opening Testimony/Staff/100, Gardner at 37.
[47] NW Natural/700, Rogers/14-16.
[48] NW Natural/700, Rogers/14.
[49] NW Natural/700, Roger/8.

financial metrics which result in the efficient raising of capital will benefit customers as well.[50] Moreover, the Company wants the Commission to treat cost recovery of incentives case by case basis "with an evaluation to ensure that utilities are paying at market and that the at-risk pay programs are reasonable."[51] Because labor represents two-thirds of Company's operating costs, the Commission's disallowance of a portion of incentives has a significant impact.[52]

Q. What is Staff's response to the Company's arguments opposing the Commission's incentive policy?

A. The Commission's disallowance of incentives has been well-documented in past orders and Commission practice. The Company argues that pay-at-risk is necessary to maintain competitive compensation, but the Commission's policy does not depend on the reasonableness of the overall compensation.[53] In Order No. 97-171, the Commission stated that just because overall compensation is reasonable, "does not determine whether it is reasonable to ask ratepayers to fund bonuses with the declared goals of incentive plans."[54]

The Company also maintains that incentives benefit both shareholders and customers. This is not disputed by the Commission, which allows 50 percent of merit-based incentives for non-officers.

[50] NW Natural/700, Rogers/15.
[51] NW Natural/700, Rogers/16.
[52] NW Natural/700, Rogers/15.
[53] See order 97-171 at 75.
[54] See order 97-171 at 75-76.

The Commission's ratemaking treatment of incentives is based on the stated goals for incentive programs. In Docket No. UT 125, *US West Communications (USWC)*, the Commission disallowed incentives not "based on the manner in which compensation is administered but on the purpose for which the bonuses are awarded."[55] At issue were bonuses that deal with "earnings, net income, financial performance, reengineering benefits, and stock prices and dividend growth" or goals which benefit shareholders rather than ratepayers.[56]

At Northwest Natural, Officers receive their long-term incentives in the form of restricted stock units and Performance Shares, both of which only vest and accrue if performance conditions are met.[57] Financial performance measures from the Company's Executive Incentive Plan and Goal Incentive Plan are both 50 percent net income while the Long-Term Incentive Plan derives "100 percent from cumulative 3-year earnings per share and subject to meeting 3-year return on invested capital."[58] In Company's testimony, incentives are "not guaranteed" for all employees and are "intended to foster high performance."[59]

The Company claims that disallowing incentives puts the utility at a financial disadvantage given its large labor costs. But the Commission's stance does not preclude utilities from paying its employees bonuses and setting appropriate

[55] See Order No. 97-171 at 76.
[56] See Order No. 97-171 at 76.
[57] NW Natural/700, Rogers/12.
[58] Staff/417, NW Natural Response to Staff DR 283.
[59] NW Natural/700, Rogers/7.

compensation. Rather, the Commission allows in rates those costs that result in just and reasonable rates for customers, distinguishing those incentives which provide greater benefit to shareholders. Moreover, since the Commission's practice is uniform in all rate cases, there is no competitive disadvantage to one particular Company.[60]

Q. What is Staff's recommendation regarding the amount of incentives in the test year?

A. Staff recommends a reduction in the Company's Oregon test year incentives of (7.870) million allocated as ($4.990 million) O&M and ($2.881 million) capital.[61] Staff also proposes disallowing ($4.237 million) of officer incentives capitalized in plant based on 2015-2019 data.[62]

Q. Does this conclude your testimony?

A. Yes.

[60] UG 344 Staff/100, Gardner/41.
[61] Staff/418, electronic workpaper, UG 388 NWN W&S model CONF HBC, tab 3-yr incentives.
[62] Staff/419, NW Natural Response to Staff DR 361.

CASE: UG 388
WITNESS: HEATHER COHEN

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 401

Witness Qualifications Statement

April 17, 2020

WITNESS QUALIFICATIONS STATEMENT

NAME: Heather Cohen

EMPLOYER: Public Utility Commission of Oregon

TITLE: Senior Utility Analyst
Energy Rates, Finance and Audit Division

ADDRESS: 201 High Street SE. Suite 100
Salem, OR. 97301

EDUCATION: Bachelor of Arts, Political Science
Fordham University, New York, NY

Master of Public Policy
American University, Washington, DC

EXPERIENCE: I have been employed as a Senior Financial Analyst by the Oregon Public Utility Commission since January 2020 in the Energy, Rates and Finance Division. I currently perform a range of financial analysis duties related to natural gas and electric utilities, with a focus on operations and maintenance.

I have ten years of professional level budget and fiscal analysis experience. I was previously employed as a Budget Analyst with the Oregon Department of Education (ODE), where I was the lead analyst for the Early Learning Division (ELD) which includes the federal $97M Child Care Development Fund (CCDF) and $37M Preschool Promise program. Prior to ODE, I was a Senior Financial Analyst for the state of Texas's Department of Family and Protective Services and Health and Human Services. Before that, I was a Project Manager for the University of Southern California where I directed data collection and analysis, staffing and deliverables for a $1.2M federal grant related to the provision of mental health services in Los Angeles County. Prior to USC, I was a Senior Budget Analyst for the City of New York responsible for the $1B expense budget of the Administration for Children's Services (ACS).

CASE: UG 388
WITNESS: HEATHER COHEN

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 402

Exhibits in Support
Of Opening Testimony

April 17, 2020

NW Natural®

Rates & Regulatory Affairs
UG 388
2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 279

279. Referring to the Company's Exhibit 1000, please complete Staff's attachment UG 388 DR 279 Attachment 1.xlsx by providing the data for each calendar year 2014 through 2019 for the gas operations on an Oregon-allocated/jurisdictional basis. This request is ongoing for the 2019 calendar year.

Response:

Please see the completed "UG 388 OPUC DR 279 Attachment 1" workbook.

NW Natural
2019 Oregon Earnings Review
Uncollectible Accounts Adjustments
($000)

Line No.		2017 - 2019 Total	2019 Actual	2018 Actual	2017 Actual
		(a)	(b)	(c)	(c)
	Gas Revenues				
1	**Residential**	1,312,287	438,515	415,008	458,763
2	**Commercial**	649,781	215,042	205,058	229,681
3	**Industrial**	64,544	20,843	20,943	22,757
4	**Interruptible**	58,741	17,033	19,535	22,173
5	**Total**	2,085,353	691,434	660,545	733,374
	Net Write-Offs				
6	**Residential**	1,698	518	457	723
7	**Commercial**	319	112	109	98
8	**Industrial**	44	16	1	27
9	**Interruptible**	20	20	-	-
10	**Total**	2,081	666	568	848
	Write-Off Percentage				
11	**Residential**	0.129%	0.118%	0.110%	0.158%
12	**Commercial**	0.049%	0.052%	0.053%	0.043%
13	**Industrial**	0.068%	0.076%	0.006%	0.117%
14	**Interruptible**	0.034%	0.117%	0.000%	0.000%
15	**Weighted Total**	0.100%	0.096%	0.086%	0.116%
	Normalized Uncollectible				
16	**Residential**	$567			
17	**Commercial**	106			
18	**Industrial**	14			
19	**Interruptible**	6			
20	**Total**	$693			
	Materials & Supplies				
21	**Allocation Factor (Total Customers)**	88.62%			
22	**Oregon Normalized Amount**	614			
23	**Oregon Allocation of Accrued Amount**	400			
24	**Adjustment (Normalized less Accrued)**	214			

NW Natural
2018 Oregon Earnings Review
Uncollectible Accounts Adjustments
($000)

Line No.		2016-2018 Total	2018 Actual	2017 Actual	2016 Actual
		(a)	(b)	(c)	(c)
	Gas Revenues				
1	Residential	1,274,666	415,008	458,763	400,895
2	Commercial	632,471	205,058	229,681	197,732
3	Industrial	64,749	20,943	22,757	21,048
4	Interruptible	60,997	19,535	22,173	19,289
5	Total	2,032,883	660,545	733,374	638,964
	Net Write-Offs				
6	Residential	1,763	457	723	583
7	Commercial	300	109	98	92
8	Industrial	152	1	27	124
9	Interruptible	-	-	-	-
10	Total	2,215	568	848	799
	Write-Off Percentage				
11	Residential	0.138%	0.110%	0.158%	0.145%
12	Commercial	0.047%	0.053%	0.043%	0.047%
13	Industrial	0.235%	0.006%	0.117%	0.589%
14	Interruptible	0.000%	0.000%	0.000%	0.000%
15	Weighted Total [1]	0.109%	0.086%	0.116%	0.125%
	Normalized Uncollectible				
16	Residential	$574			
17	Commercial	97			
18	Industrial	49			
19	Interruptible	-			
20	Total	$720			
	Materials & Supplies				
21	Allocation Factor (Total Customers)	88.81%			
22	Oregon Normalized Amount	640			
23	Oregon Allocation of Accrued Amount	604			
24	Adjustment (Normalized less Accrued)	$36			

NW Natural
2017 Oregon Earnings Review
Uncollectible Accounts Adjustments
($000)

Line No.		2015-2017 Total	2017 Actual	2016 Actual	2015 Actual
		(a)	(b)	(c)	(c)
	Gas Revenues				
1	Residential	1,273,637	458,763	400,895	413,979
2	Commercial	641,660	229,681	197,732	214,247
3	Industrial	68,076	22,757	21,048	24,271
4	Interruptible	71,243	22,173	19,289	29,781
5	Total	2,054,616	733,374	638,964	682,278
	Net Write-Offs				
6	Residential	2,008	723	583	702
7	Commercial	264	98	92	74
8	Industrial	154	27	124	3
9	Interruptible	-	-	-	-
10	Total	2,426	848	799	779
	Write-Off Percentage				
11	Residential	0.158%	0.158%	0.145%	0.170%
12	Commercial	0.041%	0.043%	0.047%	0.035%
13	Industrial	0.226%	0.117%	0.589%	0.012%
14	Interruptible	0.000%	0.000%	0.000%	0.000%
15	Weighted Total [1]	0.118%	0.116%	0.125%	0.114%
	Normalized Uncollectible				
16	Residential	$723			
17	Commercial	95			
18	Industrial	51			
19	Interruptible	-			
20	Total	$869			
21	Allocation Factor (Total Customers)	88.99%			
22	Oregon Normalized Amount	774			
23	Oregon Allocation of Accrued Amount	771			
24	Adjustment (Normalized less Accrued)	$3			

NW Natural
2016 Oregon Earnings Review
Uncollectible Accounts Adjustments
($000)

Line No.		2014-2016 Total	2016 Actual	2015 Actual	2014 Actual
		(a)	(b)	(c)	(c)
	Gas Revenues				
1	**Residential**	1,255,462	400,895	413,979	440,588
2	**Commercial**	638,069	197,732	214,247	226,090
3	**Industrial**	70,634	21,048	24,271	25,315
4	**Interruptible**	81,101	19,289	29,781	32,031
5	**Total**	2,045,266	638,964	682,278	724,024
	Net Write-Offs				
6	**Residential**	2,392	583	702	1,107
7	**Commercial**	289	92	74	123
8	**Industrial**	127	124	3	0
9	**Interruptible**	-	-	-	-
10	**Total**	2,808	799	779	1,230
	Write-Off Percentage				
11	**Residential**	0.191%	0.145%	0.170%	0.251%
12	**Commercial**	0.045%	0.047%	0.035%	0.055%
13	**Industrial**	0.180%	0.589%	0.012%	0.000%
14	**Interruptible**	0.000%	0.000%	0.000%	0.000%
15	**Weighted Total** [1]	0.137%	0.125%	0.114%	0.170%
	Normalized Uncollectible				
16	**Residential**	$764			
17	**Commercial**	90			
18	**Industrial**	38			
19	**Interruptible**	-			
20	**Total**	$891			
21	**Allocation Factor (Total Customers)**	89.14%			
22	**Oregon Normalized Amount**	794			
23	**Oregon Allocation of Accrued Amou**	1,114			
24	**Adjustment (Normalized less Accru**	($320)			

CASE: UG 388
WITNESS: HEATHER COHEN

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 403

Exhibits in Support
Of Opening Testimony

April 17, 2020

NW Natural®

Rates & Regulatory Affairs
UG 388
2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 282

282. Provide all internal workpapers generated for salaries, wages, incentives, overtime, and payroll costs that support the amounts for these costs included in Exhibit 1002. In the response, include supporting schedules reconciling to the base year, adjustments, and test year, notes and explanative narrative that ensure that the Company's supporting detail properly represents what it included in its filed case. This request includes both O&M and Capitalized costs.

Response:

Confidential UG 388 OPUC DR 282 Attachment 1 is the workbook used to generate Test Year O&M. This workbook includes calculations for generated salaries, wages, incentives, overtime, and payroll costs that support the amounts included in the revenue requirement. Due to the large size of Confidential UG 388 OPUC DR 282 Attachment 1 it is being provided on CD.

The Test Year and Base Year O&M totals found in Exhibit 1002 can be found in Confidential UG 388 OPUC DR 282 Attachment 1 in the "Exhibit – O&M" tab, cells E116 (Test Year) and H116 (Base Year).

The Test Year O&M detail excluding Environmental Rider and Equity Floatation costs can be found in the "O&M TY FERC Allocation Summary" tab, cell AC139. The Base Year O&M detail excluding Environmental Rider costs can be found in the "O&M BY FERC Allocation Summ" tab, cell AP139.

From these tabs, detailed calculations can be traced back throughout the model.

CASE: UG 388
WITNESS: RUSSELL (RUSS) BEITZEL

PUBLIC UTILITY COMMISSION
OF
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STAFF EXHIBIT 500

Opening Testimony

April 17, 2020

Q. Please state your name, occupation, and business address.

A. My name is Russ Beitzel. I am a Senior Utility Analyst employed in the Retail Telecom & Water Regulation division of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE, Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. My witness qualification statement is found in Exhibit Staff/501.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to support Staff's adjustments to NW Natural's rate base related to NW Natural's Materials and Supplies account and to NW Natural's test year expense for Advertising Expense.

Q. Did you prepare an exhibit for this docket?

A. Yes. I prepared four exhibits in addition to my witness qualification statement and testimony.

Q. How is your testimony organized?

A. My testimony is organized as follows:

Issue 1. Materials and Supplies 2
Issue 2. Advertising Expense..... 5
Issue 3. Customer Accounting Expense 12
Issue 4. Customer Service and Selling Expense 14
Issue 5. Admin and General Expense..... 16

Exhibit 501, Witness Qualification Statement……..Beitzel/1
Exhibit 502, DR Responses……..……..……..…….Beitzel/2
Exhibit 503, M&S Offsetting Account Summary..……..……..…Beitzel/1
Exhibit 504, M&S by month……...……..……..…Beitzel/2
Exhibit 505, No Adjustment Account Summary...……..……..…Beitzel/3

ISSUE 1. MATERIALS AND SUPPLIES

Q. Please describe the Commission's historical treatment of "Materials and Supplies".

A. The cost of materials and supplies is a subcategory of "working capital" that gas utilities are allowed to include in rate base. The concept is that utilities spend their money to keep a store of materials and supplies ready for use and should earn a return on that investment.[1]

Q. What amount is the Company proposing to include in rate base for Materials and Supplies?

A. The Test Year amount for Oregon is $14.5MM, which is an increase of $1.7MM over the Base Year of $12.8MM. This is a 9.2 percent growth rate over the two years.

Q. What is the three-year average for this account?

A. The average ending monthly balance for this account, from 2017-2019, is $10.8MM. From 2017 to 2018, NWN's costs increased by $3.5M to a total $12.8MM.

Q. Did Staff request justification for the increase?

A. Yes. In Staff DR No. 205, Staff asked for explanations concerning a $3.5MM increase from 2017 to 2018 (DR No. 205(a)) and the $4.1MM from 2018 to 2021 (DR No. 205(b)).

Q. What was the Company's explanation for the increase from 2017-2018?

[1] See e.g., *In re California-PacifiCorp Utilities Company* (Docket No. UF 3195), Order No. 76-132 (1976 WL 419251).

A. The Company stated that the increase from 2017 to 2018 is due primarily to two main industry changes. The Company stated:

> First, utilities have seen price increases from tariffs imposed on supplies such as steel and aluminum. Utilities rely heavily on affordable and reliable supply of materials such as steel and aluminum, but the imposed tariffs have increased costs for utilities over the past couple years. Second, there has been a nationwide mandate for utilities to upgrade their systems, and suppliers have struggled to keep up with the demand. Merging and acquiring activity in the market have created increased disruption in supplies and system enterprise resource planning (ERP) changes for suppliers, which have slowed down their business practices. NW Natural has found that it is difficult for suppliers to meet delivery deadlines, so it decided to build up its own material safety stock levels to minimize stock outs.[2]

Q. What was the Company's response for the increase from 2018-2021?

A. The Company stated:

> The forecasted data are based on an excel Trend formula. The formula finds the linear trend by using the least squares method to calculate the line of best fit for a set of values. It uses actual data from January 2015 through September 2019 to find the "trend" and uses that trend to predict the forecasted months for October 2019 through October 2021.[3]

Q. What is Staff's analysis of the Company's response regarding the increase in cost of materials and supplies from 2017 to 2018?

A. For the increase from 2017 to 2018, Staff finds the Company's costs to be reasonable in order to safeguard against potential raw material stock outs and increasing tariffs.

[2] See Exhibit Staff/502, Beitzel/1, NW Natural's response to Staff Data Request No. 205(a).
[3] See Exhibit Staff/502, Beitzel/1, NW Natural's response to Staff Data Request No. 205(b).

Q. What is Staff's analysis of the Company's response regarding the increase from 2018-2021?

A. Staff did not find sufficient evidence to accept NWN's modeling of a continued linear trend of cost increases beyond 2019 for the following reasons.

Upon analysis of transactions in NWN's materials and supplies expense accounts, Staff found that for the years 2017-2019, the expense accounts ranged between $3.4MM to $3.8MM per year.[4] This data shows a consistency in the amounts used from Materials and Supplies. Additionally, the month end balances for Materials and Supplies from 2014 to 2019 show continued growth consistent with the Company's response in DR205a. At no point in the above six years of month end data is there a significant decline in any one month, showing an actual interruption to the supply of materials and supplies.[5] Nor were any specific events referenced in the Company's response that caused a shortage of available inventory.

Q. What is Staff's recommendation?

A. Staff is not satisfied that NW Natural's costs, which significantly increased from 2017 to 2018, will continue to grow in a linear trend. NW Natural explained the increase in costs from 2017 to 2018 was based on two particular factors. NW Natural has not attempted to show that these factors will continue in the future

[4] See Exhibit Staff/503, Beitzel/1, Materials and Supplies expense offset accounts.
[5] See Exhibit Staff/504, Beitzel/1, M&S by month.

and affect NW Natural's buying practices in the same way, but nonetheless has forecasted its costs as if they will. In absence of persuasive evidence that NW Natural's costs will continue to grow at the rate seen between 2017-18, Staff recommends that the account remain at the Base Year average of $12.8MM, requiring an adjustment of ($1.7MM) from the Test Year.

ISSUE 2. ADVERTISING EXPENSE (NON PAYROLL)

Q. Does the Commission have a standard for how advertising-related expenses are treated for ratemaking purposes?

A. Yes. OAR 860-026-0022 sets out how advertising-related expenses are addressed in a rate case. Each type of advertising expense is classified into a category (Categories A-E), and each category has a different standard for inclusion in rates that is applied by the Commission.

Category “A” expenses are for utility service advertising expenses and utility information advertising expenses.[6] These expenses are presumed reasonable up to 0.125 percent of the gross retail operating revenues determined in the applicable rate proceeding.[7]

Category “B” expenses are legally mandated advertising expenses, which are presumed to be just and reasonable.[8]

Category "C” expenses are institutional advertising expenses, promotional advertising expenses, and any other advertising expenses not fitting into Category “A”, “B”, or “D” (political advertising and non-utility advertising) expenses.[9] There is no presumption that Category “C” advertising expenses are reasonable; rather, the energy utility carries the burden of showing that any Category “C” advertising expenses are just and

[6] OAR 860-026-0022(2)(a).
[7] OAR 860-026-0022(3)(a).
[8] OAR 860-026-0022(2)(b); OAR 860-026-0022(3)(b).
[9] OAR 860-026-0022(2)(c).

reasonable for rate-making purposes.[10] Furthermore, the utility must separately state the amount of advertising expenses in Category "C" in any rate filing made under ORS 757.210 and ORS 759.180.[11]

Q. Which categories of Advertising are represented in NW Natural's rate case?

A. NW Natural has expenses in categories A-C, but is only seeking rate recovery for categories A-B.

Q. What amount is NW Natural seeking in rate recovery?

A. NW Natural is seeking the following:

Category A – The Oregon total is $1.56MM (687,730 customers at $2.55/ea X 89.14% OR%).[12]

Category B – The Oregon total is $.9MM ($1.01MM X 89.14% OR%).[13]

Q. Does the Category A amount follow the OAR standard of 'presumed reasonable up to 0.125 percent of the gross retail operating revenues' referenced above?

A. No.

Q. What would the OR Category A amount be for the Test Year at 0.125 percent of the gross retail operating revenues?

A. The Category A expense would be $.78MM ($697MM X .125% X 89.14% OR%)[14]

[10] OAR 860-026-0022(3)(c).
[11] *Id.*
[12] See Exhibit Staff/502, Beitzel/3-4, NW Natural's response to DR104.
[13] See Exhibit Staff/502, Beitzel/4, NW Natural's Application.
[14] See Exhibit Staff/502, Beitzel/3-4, NW Natural's response to DR104.

Q. Did NW Natural provide an explanation for the departure from the OAR 860-026-0022(3) guidelines?

A. Yes. In the Company's initial application Beck states, as part of eleven pages of information and exhibits, that:

> The gross retail revenue-based formula produces a skewed result because the Company's gross retail revenues are, in part, driven by natural gas commodity costs. This means that when natural gas prices are low (as they currently are), the Company's gross retail revenues will be lower, and in turn, so will the results of the formula. For this reason, we find it difficult to make a correlation between the amounts presumed reasonable per rule OAR 860-026-10022(3)(a) and the amounts needed to effectively communicate Category A topics to our customers.[15]

Q. Does Staff agree with the proposed amount and explanation referenced in NW Natural's application?

A. Yes. The Company's approach is consistent with the treatment of Category A expenses in the prior rate case[16] and is deemed reasonable.

Q. Please describe Staff's analysis of NW Natural's proposed advertising expenses.

A. Staff reviewed the corresponding sections of the Company's Application, reviewed the responses to the Standard and Staff DRs pertaining to Advertising,[17] and analyzed the corresponding transactional data provided in response to DR 173.

[15] See NW Natural Application, NW Natural/800 Beck/3-14.
[16] See GRC UG 344 NW Natural, Order 19-105.
[17] NW Natural Responses to DRs 104, 105, 173 and 197-204.

Category A – Staff reviewed the responses to several DRs along with statements from the Company's Application. Table 1 is an example of data from the Company's response to Staff DR 202 and the Application at a summary level. It shows that Category A expenses are expected to decrease between the Base and Test Years.

Table 1. OR Base and Test Year Cat A-B			
NWN	2019	2021	Change
	OR	OR	OR
Category A	1,649,603	1,563,258	(86,345)
Category B	873,679	900,314	26,635
	2,523,282	2,463,572	(59,709)

From the Company's response to Staff DR 200 and the Application, Staff created Table 2, which shows the per customer expense for Category A declining from 2017-2021 for NW Natural in total. As the allocation of Advertising expense is based on the customer percentage, Oregon per customer expense would follow the same trend.

Table 2. NW Natural Advertising Exp per Customer					
Year	**Number of Customers**	**Cat. A Actual ($)**	**Expense per Customer**	**Cat. B Actual ($)**	**Expense per Customer**
2015	631,852	$1,278,609	$2.02	$434,324	$0.69
2016	640,508	$1,343,069	$2.10	$723,829	$1.13
2017	650,402	$2,134,287	$3.28	$701,214	$1.08
2018	659,959	$1,823,694	$2.76	$848,889	$1.29
2019	669,560	$1,860,595	$2.78	$985,426	$1.47
2021	687,730	$1,753,712	$2.55	$1,010,000	$1.47

In its response to Staff DR 201 the Company provided information that linked the SAP Order Number field to specific Advertising categories, allowing Staff to analyze the transactional level data and compare it to the summary information. Staff found that the transaction level information matched the

summary information at the company level and the transaction descriptions were appropriate for advertising expenses. Table 3 shows the summary for 2019.

Table 3. Order No by Category

Category	Order	$
	909-20000 Total	637,106
	909-21000 Total	204,495
	909-23000 Total	373,951
	909-24000 Total	581,463
	909-26000 Total	13,580
	909-29000 Total	50,000
Category A Total		1,860,595
	909-28000 Total	985,426
Category B Total		985,426

Category B – Category B expenses are safety related communication that are "legally mandated messages intended to ensure that NW Natural customers, contractors, public officials, emergency officials and the general public within the NW Natural service territory know how to use natural gas safely, are prepared in the event of an earthquake, know how to recognize, react, and respond to a potential leak or safety issue related to natural gas, and how to prevent damages to the underground utility lines."[18]

Staff reviewed the Company's responses to several DRs along with statements from the Company's Application.[19] Table 1 (above) shows Category B increasing $27K (3 percent) from the Base Year to Test Year.

[18] See NW Natural Application, NW Natural/800 Beck/14.
[19] See NW Natural Application, NW Natural/800 Beck/14-16.

Table 2 (above) shows the per customer expense increasing from 2017 to Test Year. Beck states that the primary drivers for this increase are "damage prevention and emergency preparedness awareness and education."[20] The increase relates to damage from increased construction activities and the corresponding information initiative to inform contractors of the Call Before You Dig campaign.

Category C – See below concerning FERC 913.

Q. Does Staff agree with the Category B Test Year amount?

A. Yes. With the explanations provided in the Application cited above combined with the small percentage increase, Staff agrees that the Category B expenses are appropriate.

Q. For Category C expenses, how does Northwest Natural utilize FERC 913?

A. Northwest Natural records Category C Advertising expenses in FERC 913, which are not included in rate recovery.

Q. Does Staff have any adjustments to the Company's proposed Advertising Expense FERC 913?

A. Yes.

Q. What is Staff's recommendation?

A. In response to DR 206a the Company stated that all Category C expenses are removed from rate making and an error was made in providing the non-payroll

[20] See NW Natural Application, NW Natural/800 Beck/15.

amount of ($70,983).[21] Staff recommends adding $70,983 to the revenue requirement for FERC 913.

[21] See Exhibit Staff/502, Beitzel/2, NW Natural's response to Staff Data Request 206a.

ISSUE 3. CUSTOMER ACCOUNTING EXPENSE (NON PAYROLL)

Q. Does the Commission Staff have a standard for how Customer Accounting-related expenses are treated for ratemaking purposes?

A. Expense accounts are reviewed for prudence and appropriate use per FERC account.

Q. What is NW Natural's Test Year proposal for Customer Accounting expenses?

A. The following individual FERC account balances were proposed for the Test Year:

FERC 901 Supervision: $3.2K, a decrease of $0.6K from the Base Year.

FERC 902 Meter Reading: $63.7K, an increase of $1.5K from the Base Year.

FERC 903 Customer Records and Collections: $7.5M, an increase of $2.6M from the Base Year.

Q. Please describe Staff's analysis of NW Natural's proposed Customer Accounting expenses?

A. Staff reviewed the corresponding sections of the Company's Application, reviewed the responses to the Standard and Staff DR pertaining to Customer Accounting expenses,[22] and analyzed the corresponding transactional data provided in response to DR 173.

Q. Does Staff have any adjustments to the Company's proposed Customer Accounting Expenses?

[22] Staff DR 206.

A. No. There was no material change in expense for FERC Accounts 901-Supervision and 902- Meter Reading.[23] The only material change in Customer Accounting expense from the Base Year is for FERC Account 903 for Customer Records and Collections.[24] NW Natural explained the reasons for the change in its direct testimony[25] and in response to Staff DR 206B.[26] Staff determined the Company's explanation – A new agreement with Paymentus for flat fee per transaction combined with an increase in customer bank card usage for payments – to be satisfactory and the amount included for the Test Year to be reasonable.

[23] See Exhibit Staff/505, Beitzel/1, Oregon Non Labor Customer Accounting expenses.
[24] See Exhibit Staff/505, Beitzel/1, Oregon Non Labor Customer Accounting expenses.
[25] See NW Natural/900, Davilla/11-12.
[26] See Exhibit Staff/502, Beitzel/2, NW Natural's response to Staff Data Request 206B.

ISSUE 4. CUSTOMER SERVICE AND SELLING EXPENSE (NON PAYROLL)

Q. Does Commission Staff have a standard for how Customer Service and Selling Expense-related expenses are treated for ratemaking purposes?

A. Expense accounts are reviewed for reasonableness and appropriate use per FERC account.

Q. What is NW Natural's Test Year proposal for Customer Service and Selling expenses?

A. The following individual FERC account balances were proposed for the Test Year:

FERC 908 Customer Assistance: $0.7M, an increase of $52K.

FERC 910 Misc. Customer Service: $36K, a decrease of $131K.

FERC 911 Sales Supervision: $(4)K, a decrease of $4K.

FERC 912 Demonstration and Selling: $0.9M, a decrease of $30K.

Q. Please describe Staff's analysis of NW Natural's proposed Customer Service and Selling expenses?

A. Staff reviewed the corresponding sections of the Company's Application, reviewed the responses to the Standard DRs pertaining to Customer Service and Selling expenses, and analyzed the corresponding transactional data provided in response to DR 173. Staff also reviewed against Staff Witness Gardner's Exhibit 104 for the change in Escalation.

Q. Does Staff have any adjustments to the Company's proposed Customer Service and Selling Expenses?

A. Staff proposes the following adjustments by FERC account for the Test Year:

FERC 908 Customer Assistance: Staff does not recommend an adjustment outside of the change in CPI recommended by Witness Gardner in Exhibit 104 that results in a decrease $50,955.

FERC 910 Misc. Customer Service: Staff does not recommend an adjustment outside of the change in CPI recommended by Witness Gardner in Exhibit 104 that results in a minor change decrease of $429.

FERC 911 Sales Supervision: Staff does not recommend an adjustment outside of the change in CPI recommended by Witness Gardner in Exhibit 104 that results in a minor change increase of $22.

As Staff Witness Gardner states in her testimony, after all Staff have finished their review of O&M, she will consider an escalation adjustment based on CPI later in the rate case.

FERC 912 Demonstration and Selling. The Company's expense for demonstration and selling appears to include expense for promotional activities related to the Company's corporate identity. (See Table below.) Staff disagrees that such expense is properly recoverable in retail rates. Given that Staff has no detail showing that the expense recovered in FERC Account 912 is appropriately recoverable in retail rates, Staff proposes disallowing it. However, Staff has sent a discovery request to the Company regarding this expense and may update its adjustment based on the Company's response.

Table X	
Cost element name	**OR Amount**
OTHER CONTRACT WORK	32,854
PRINTING	227,034
DEALER RELATIONS	135,043
PROFESSIONAL SERVICE	82,078
ADVERTISING	94,946
REBATES	17,225
CORPORATE IDENTITY	150,878
	740,057

Q. At present does Staff recommend disallowing the $740,057 in the test year?

A. Yes. Staff does not expect a response from the Company by the time this testimony is filed, so Staff does recommend excluding it until the Company demonstrates these expenses are appropriately recoverable in rates.

ISSUE 5. ADMIN AND GENERAL EXPENSE (NON PAYROLL)

Q. Does the Commission Staff have a standard for how Administrative and General expenses are treated for ratemaking purposes?

A. Expense accounts are reviewed for reasonableness and appropriate use per FERC account.

Q. What is NW Natural's Test Year proposal for Administrative and General expenses?

A. The following individual FERC account balances were proposed for the Test Year:

FERC 921 Office Supplies: $22M, an increase of $2.8M.

FERC 922 Admin Exp Transfer: $(15.5)M, a credit increase of $(3.1)M.

FERC 930 Misc General: $3.3M, an increase of $129K.

FERC 931 Rents: $9.5M, an increase of $5.3M.

Q. Please describe Staff's analysis of NW Natural's proposed Administrative and General expenses?

A. Staff reviewed the corresponding sections of the Company's Application, reviewed the responses to the Standard, Staff, AWEC, and CUB DRs[27] pertaining to Admin and General expenses, and analyzed the corresponding transactional data provided in response to Staff DR 173.

Q. Does Staff have any adjustments to the Company's proposed Customer Service and Selling Expenses?

A. Staff proposes the following adjustments by FERC account for the Test Year:

[27] Staff DRs 310-311, CUB DR 17, AWEC DRs 4-9.

FERC 921 Office Supply: No adjustment. NW Natural explained the reason for the change in testimony. The increase includes four IT&S projects, replacing the Company's software that manages customer orders, replacing and upgrading the Company's website, updating to Microsoft Office 365 E5, Company Vehicle Parking Expense, new CBA with the OPEIU for employee protection equipment and contracted security solutions.[28]

FERC 922 Admin Expense Transfer: No adjustment. This account moves expenses from the regulated utility income statement to the corporate level and is being increased for the Test Year.[29]

FERC 930 Misc. General: No adjustment. This account is increasing at the Urban CPI rate.[30]

FERC 931 Rents: No adjustment. NW Natural is moving company headquarters and the application has extensive information about the move[31] with the changes in specific accounts detailed in the following table:

Table 4

	2019		Test Year	
Name/location (a)	**Avg Monthly Cost (b)**	**Yearly Total (C)**	**Avg Monthly Cost (b)**	**Yearly Total (C)**
OPS Rent - 220 NW Second	383,868	4,606,422	-	-
Amortization of OPS Leasehold improvements	-	-	-	-
250 Taylor Rent	-	-	792,104	9,505,254
Amortization of 250 Taylor Leasehold improvements	-	-	94,243	1,130,914
Equipment Rental	1,876	22,509	1,991	23,898
Rent for various pooled spaces	2,678	32,141	2,518	30,210
Mist Compressor Lease	3,687	44,238	-	-
Livingston Tower Amort	69	828	-	-
Other	-	-	-	-
	392,178	4,706,138	890,856	10,690,276
Oregon amount		**4,170,545**		**9,473,646**
Increase				5,303,100

[28] See Exhibit Staff/505, Beitzel/3, Oregon Non Labor Admin and General expenses.
[29] See Exhibit Staff/505, Beitzel/3, Oregon Non Labor Admin and General expenses.
[30] See Exhibit Staff/505, Beitzel/3, Oregon Non Labor Admin and General expenses.
[31] See NWN/500, Pipes/5-42.

Q. Does this conclude your opening testimony?

A. Yes.

CASE: UG 388
WITNESS: RUSS BEITZEL

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 501

Witness Qualifications Statement

April 17, 2020

WITNESS QUALIFICATIONS STATEMENT

NAME: Russell (Russ) Beitzel

EMPLOYER: Public Utility Commission of Oregon

TITLE: Senior Utility Analyst
Telecommunications and Water Division

ADDRESS: 201 High Street SE. Suite 100
Salem, OR. 97301

EDUCATION: Bachelor of Science in Accounting, Otterbein University

EXPERIENCE: I am currently a Senior Utility Analyst for the PUC, focused primarily on regulated water companies. I worked at Ashland, Inc for twenty years as a manufacturing and corporate accountant and business analyst for a business unit with approximately one billion dollars in global annual sales. My accountant duties included product cost analysis, general ledger account analysis, SOX compliance, and internal and external audit compliance. My analyst duties included budgeting, forecasting, financial statement analysis, acquisition tracking, and division financial support for a global business unit.

CASE: UG 388
WITNESS: RUSSELL (RUSS) BEITZEL

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 502

Exhibits in Support of Testimony

April 17, 2020

OPUC Data Request 205

205. In reference to data submitted with SDR 084 Attachment 1 for Materials and Supplies, please provide explanations and evidence for what is driving the following:
a. For calendar years 2016 and 2017, there was a decline in the total Material and Supplies balance compared to calendar year 2015. Please explain why calendar year 2018 increased $3.5MM compared to calendar year 2017.
b. Please explain why the forecasted data provided through Oct 2021 continues to increase for a total of $4.1MM over calendar year 2018.
c. Please explain why the Material and Supplies account is increasing at a forecasted CAGR of over 15% from 2018 to 2021.

Response to OPUC Data Request 205

a. The $3.5M increase in 2018 compared with calendars 2016 and 2017 is due primarily to two main industry changes. First, utilities have seen price increases from tariffs imposed on supplies such as steel and aluminum. Utilities rely heavily on affordable and reliable supply of materials such as steel and aluminum, but the imposed tariffs have increased costs for utilities over the past couple years. Second, there has been a nationwide mandate for utilities to upgrade their systems, and suppliers have struggled to keep up with the demand. Merging and acquiring activity in the market have created increased disruption in supplies and system enterprise resource planning (ERP) changes for suppliers, which have slowed down their business practices. NW Natural has found that it is difficult for suppliers to meet delivery deadlines, so it decided to build up its own material safety stock levels to minimize stock outs.

b. The forecasted data are based on an excel Trend formula. The formula finds the linear trend by using the least squares method to calculate the line of best fit for a set of values. It uses actual data from January 2015 through September 2019 to find the “trend” and uses that trend to predict the forecasted months for October 2019 through October 2021.
In UG 388 OPUC DR 205 Attachment 1, the graph represents the linear trend created based on the actual data from January 2015 through September 2019. The yellow line represents the actual data, the red dotted line represents the forecasted data from October 2019 through October 2021, and the blue dotted line represents the linear trend upon which we based our forecast. Based on that trend line, we predict an increase of $4.1M from 2018 through October 2021.

c. Please see answer for part b. Based on the linear trend, we predict a compound annual growth rate (CAGR) of about 15% from 2018 to 2021

OPUC Data Request 206

206. In reference to summary data provided with SDR 058 Attachment 2 for various FERC accounts, please provide explanations and evidence for what is driving the following:
a. In SDR 058 Attachment 2 (without labor expenses) for years 2017-2019, FERC account 913 averages above $500,000 per year for total company. For the Test year it is ($70,983). Please explain the change.
b. In SDR 058 Attachment 2 (without labor expenses) for years 2017-2019, FERC account 903 averages above $5.5MM per year for total company. For the Test year it is $8.5MM. In the application NWN/900 pages 11-12, Paymentus is cited as adding an additional $1.2MM to the account. Please explain the remaining change of $1.8MM ($8.5-$5.5-$1.2=$1.8).

Response to OPUC Data Request 206

a. FERC 913 is the account where Category "C" advertisement expenses are charged. NW Natural/900, Davilla/Page 17 lines 7-9 discusses the removal of these expenses in the Test Year. During the Test Year, if these expenses were not removed then the total Category "C" expense would have been estimated at $634,979. Of that amount, $70,983 would have been payroll and $563,995 nonpayroll. An adjustment was made in the Test Year to completely offset this expense with a $634,979 credit. SDR 058 Attachment 2 (without labor expenses) incorrectly applied the entire $634,979 credit to non-payroll FERC 913 as opposed to only the non-payroll piece of $563,995. As a result, SDR 058 nonpayroll FERC 913 shows a credit of $70,983. The correct requested non-payroll amount in FERC 913 in the Test Year in SDR 058 should have been $0.
b. In the Base Year and years prior, NW Natural paid vendors that were used by Account Services for the collection of customer payments in FERC 903, while expenses for any related bank fees under NW Natural's treasury management has been expensed to FERC 921. In this configuration, which includes the Base Year, the merchandise services costs were charged to FERC 903 and the bank fees were charged to FERC 921. Under the upcoming Paymentus agreement beginning July 1, 2020, both these services will roll up to a singular set fee per transaction and will be accounted for in FERC 903, similar to how we account for pay station fees handled by a third party.

   NW Natural/900 pages 11-12 discussed the net increase cost of $1.2M and identified this as occurring in FERC 903; however, the increase in FERC 903 for Paymentus will be $2.8M as compared with the Base Year, and is offset by $1.6M reduction in FERC 921 (where current bank fees are charged), a net increase of $1.2M. The remaining $200K of the increase is a result of CPI inflation applied to costs other than Paymentus which occur in FERC 903.

Request No.: UG 388 SDR 104
For the questions below related to advertising expense, please see the definitions and descriptions in OAR 860-026-0022. For questions related to promotional activities or concessions, please see OAR 860-026-0015 & 0020.
a. Please identify the Category A advertising expense included in the Test Year; including references to the appropriate testimony and / or exhibit pages;
b. Please provide a work paper that shows the calculation of the Category A limit provided in OAR 860-026-0022 (3) (a);
c. If the Test Year Category A advertising expense exceeds the OAR 860 026-0022 (3) (a) limit, please provide support for including the additional expense in rates;
d. Please identify the Category B advertising expense included in the Test Year; including references to the appropriate testimony and / or exhibit pages;
e. For any Category C advertising expense included in the Test Year revenue requirement that is associated with a promotional activity or a promotional concession program, please provide a summary table that includes: i. A description of the activity or program, and justification for inclusion into rates; ii. A breakout of the related expense by labor & non-labor; and iii. The FERC and internal utility account to which the expense will be booked and include references to appropriate exhibit pages. f. Please identify any other budgeted advertising expense for the test year that will NOT be included in base rates, including below-the-line or nonutility expense, or advertising expense expected to be collected through a tariff. Please include how the expense is allocated between the categories identified in OAR 860-026-0022(2). Please describe the activities and associated expense (broken out by labor & non-labor) associated with marketing research and sales activities (include fuel switching and retention of customers) that is included in the test year. Please include references to the testimony and exhibits, and to which FERC and internal utility accounts this expense is booked.

Response:
Category A expenditures identified for the test year total $2.55 per customer (NW Natural/800, Beck/4).

a. The calculation allowed by OAR 860-026-0022(3)(a) would have been $1.27 per customer during the test year 2020/21:

NW Natural Proposed Operating Revenue = $697,245,170 Category A allowed – 0.125%

(Calculation = $697,245,170 x .00125 = $871,556)

Test Year number of customers = 687,730 Category A per customer = $1.27

(Calculation = $871,556/687,730 = $1.27)

b. Support for the proposed Category A advertising expense is provided at: (NW Natural/800, Beck/3).

c. Category B expenditures identified for the test year total $1,010,000; (NW Natural/800, Beck/20-22)

NW Natural Application NW Natural/800:

Q. What Category A communications expenses are included in the Test Year?

A. The Company has included $1,750,000 for Category A communications and media outreach expenses in the Test Year.

Q. What Category B communications expenses are included in the Test Year?

A. The Company has included $1,010,000 for Category B communications and media outreach expenses in the Test Year.

CASE: UG 388
WITNESS: RUSSELL (RUSS) BEITZEL

PUBLIC UTILITY COMMISSION
OF
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STAFF EXHIBIT 503

Exhibits in Support of Testimony

April 17, 2020

Staff/503
Beitzel/1

NW Natural			Staff/503
Docket No. UG 388			Beitzel/1
M&S Exp	2017	2018	2019
FERC Account	OR Amount	OR Amount	OR Amount
820 Total	7,257	8,806	17,492
832 Total	101		
844 Total	6,079	9,666	5,419
847 Total	10,426	8,724	11,787
856 Total	24,094	26,433	15,394
863 Total			3,435
870 Total	167		
874 Total	56,736	56,696	45,245
875 Total	3,910	4,744	2,387
877 Total	253,776	229,389	257,610
878 Total	3,754	5,306	699
879 Total	39,267	31,200	21,965
880 Total	1,629	64	3,401
881 Total			40
885 Total	1,265	992	835
887 Total	16,732	12,878	15,942
889 Total	173,948	211,793	210,558
891 Total	959	802	225
892 Total	969	6,334	23,279
893 Total	21,355	120,559	84,213
894 Total	6,007	5,983	5,342
902 Total	85		
903 Total	2,520,689	2,523,647	2,508,518
909 Total	70,580	72,659	66,471
910 Total	453	281	157
912 Total	128	3	436
921 Total	578,269	91,742	91,526
926 Total	1,203	430	6,234
930 Total	81		1,416
935 Total	20,215	20,421	24,029
Grand Total	3,820,134	3,449,552	3,424,056

CASE: UG 388

WITNESS: RUSSELL (RUSS) BEITZEL

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 504

Exhibits in Support of Testimony

April 17, 2020

Staff/504
Beitzel/1

NW Natural										Staff/504
Docket No. UG 388										Beitzel/1
			MAT & SUPPLIES-GEN	MAT & SUPPLIES-POSTA	INVENTORY RESERVE	MAT & SUPPLIES-ODORA	INVENTORY-OFFICE SUP	MAT & SUPP-DIESEL AU	MAT & SUPP-UNLEADED	Total
			NWN/154001	NWN/154010	NWN/154039	NWN/154040	NWN/154050	NWN/154071	NWN/154073	OREGON
January	2014	Actual	7,592,833	282,725	(14,735)	130,361	14,046	(19,788)	(75,555)	6,771,746
February	2014	Actual	7,532,761	289,796	(14,735)	101,101	14,535	(21,635)	(88,568)	6,689,018
March	2014	Actual	7,303,039	266,691	(14,735)	181,954	14,535	(23,070)	(103,487)	6,527,788
April	2014	Actual	7,591,337	258,297	(14,735)	163,334	14,566	(24,504)	(122,605)	6,733,909
May	2014	Actual	8,028,825	267,469	(14,735)	143,916	14,635	(25,939)	(121,128)	7,099,771
June	2014	Actual	7,873,114	287,288	(14,735)	123,700	14,784	(34,693)	(179,876)	6,908,462
July	2014	Actual	7,887,408	321,204	(14,735)	106,410	14,784	(36,648)	(192,310)	6,922,615
August	2014	Actual	7,831,431	257,826	(14,735)	197,318	14,784	(39,128)	(214,226)	6,877,375
September	2014	Actual	7,619,345	313,507	(14,735)	183,220	14,784	(43,140)	(246,302)	6,700,510
October	2014	Actual	7,432,499	318,575	(14,735)	164,068	19,041	(44,994)	(263,501)	6,515,825
November	2014	Actual	7,424,086	277,161	(14,735)	126,828	14,887	(46,848)	(283,332)	6,419,165
December	2014	Actual	8,039,353	326,419	(59,735)	166,250	14,895	(49,411)	(301,442)	6,965,605
January	2015	Actual	7,977,247	257,826	(48,932)	123,690	14,895	(51,471)	(317,324)	6,811,165
February	2015	Actual	8,050,309	311,200	(45,488)	205,766	14,950	(54,047)	(262,058)	7,037,779
March	2015	Actual	8,225,296	317,021	(42,044)	182,890	15,104	(57,356)	(203,793)	7,223,116
April	2015	Actual	8,050,805	283,066	(42,044)	164,270	15,705	(60,092)	(219,649)	7,013,318
May	2015	Actual	8,476,270	274,250	(42,044)	145,650	15,720	(63,930)	(249,283)	7,325,433
June	2015	Actual	8,849,098	310,191	(42,044)	237,835	15,720	9,532	47,554	8,071,323
July	2015	Actual	9,064,273	323,883	(41,314)	225,599	15,720	6,288	28,920	8,238,677
August	2015	Actual	9,115,707	308,942	(32,697)	213,363	15,720	3,587	11,617	8,249,696
September	2015	Actual	8,980,996	316,957	(32,697)	199,265	15,720	1,830	(3,178)	8,114,990
October	2015	Actual	9,156,618	334,152	(32,697)	178,783	15,720	6,514	88,850	8,345,325
November	2015	Actual	9,146,069	332,979	(32,697)	152,183	15,720	3,637	94,787	8,315,135
December	2015	Actual	9,690,589	364,721	(32,697)	223,440	42,200	8,017	90,615	8,892,333
January	2016	Actual	9,569,201	330,346	(32,697)	178,220	42,200	7,299	77,945	8,708,807
February	2016	Actual	9,361,017	299,177	(32,697)	154,280	42,200	4,220	60,187	8,465,559
March	2016	Actual	9,409,212	309,912	(32,697)	127,680	42,200	18,724	48,999	8,496,077
April	2016	Actual	9,210,756	336,106	(18,672)	232,409	42,200	16,413	50,386	8,449,478
May	2016	Actual	9,338,914	322,295	(18,672)	197,871	42,200	14,472	180,899	8,627,874
June	2016	Actual	9,257,876	266,842	(18,672)	184,571	42,200	12,072	52,576	8,387,724
July	2016	Actual	9,421,777	334,970	(18,672)	173,665	42,200	11,276	45,652	8,570,421
August	2016	Actual	9,491,046	305,837	(18,672)	162,281	42,200	8,639	41,677	8,589,373
September	2016	Actual	9,385,544	296,782	(18,672)	150,130	42,200	15,293	37,255	8,482,809
October	2016	Actual	9,428,230	328,521	(18,672)	129,089	42,200	13,453	45,285	8,533,812
November	2016	Actual	9,671,179	303,222	(18,672)	216,592	42,200	12,479	45,190	8,794,140
December	2016	Actual	9,553,363	310,891	(18,672)	167,081	42,200	10,165	37,566	8,648,948
January	2017	Actual	9,546,006	275,999	(18,672)	117,626	42,200	17,560	56,025	8,592,573
February	2017	Actual	9,407,695	297,383	(18,672)	195,138	42,200	16,428	46,053	8,549,323
March	2017	Actual	9,456,787	305,648	(18,672)	169,964	42,200	20,128	37,772	8,572,953
April	2017	Actual	9,771,323	335,621	(18,672)	144,789	42,200	16,159	25,956	8,832,826
May	2017	Actual	9,954,269	299,638	(18,672)	134,297	42,200	17,012	42,959	8,964,947
June	2017	Actual	9,897,236	310,535	(18,672)	122,018	42,200	13,279	25,225	8,896,558
July	2017	Actual	9,899,126	284,973	(18,672)	218,203	42,200	9,241	7,782	8,940,248
August	2017	Actual	9,509,131	322,455	(18,672)	207,009	42,200	11,981	27,090	8,647,750
September	2017	Actual	9,324,697	313,988	(18,672)	195,433	42,200	15,465	45,192	8,491,175
October	2017	Actual	9,517,839	287,909	(18,672)	178,643	42,200	7,608	29,588	8,599,740
November	2017	Actual	9,808,051	283,137	(18,672)	153,533	42,200	4,887	37,882	8,827,382
December	2017	Actual	9,590,609	318,317	(18,672)	113,633	28,115	167	32,047	8,616,092
January	2018	Actual	9,964,717	255,836	(18,672)	192,101	27,953	1,328	28,563	8,947,931
February	2018	Actual	10,640,678	293,867	(18,672)	158,798	27,953	3,156	31,014	9,534,339
March	2018	Actual	11,128,549	199,391	(53,036)	131,538	27,953	16,168	68,154	9,861,308
April	2018	Actual	11,702,603	291,802	(53,036)	112,408	27,953	19,127	79,563	10,427,799
May	2018	Actual	12,233,431	309,801	(18,672)	207,933	27,953	27,390	67,283	11,005,416
June	2018	Actual	12,096,997	186,093	(23,559)	196,229	27,953	23,739	72,393	10,769,751
July	2018	Actual	12,934,594	268,814	(23,559)	185,855	27,953	27,527	66,786	11,547,207
August	2018	Actual	13,448,192	311,355	(18,672)	173,023	27,953	28,201	67,336	12,017,571
September	2018	Actual	13,173,456	206,533	(18,672)	161,489	27,953	30,017	76,576	11,692,218
October	2018	Actual	13,310,592	282,662	(18,672)	144,784	27,953	26,661	82,770	11,862,925
November	2018	Actual	13,379,131	322,938	(18,672)	444,589	27,953	18,609	79,300	12,202,885
December	2018	Actual	13,071,435	184,971	(18,672)	194,666	31,313	20,397	80,142	11,612,514

Staff/504
Beitzel/2

NW Natural										Staff/504
Docket No. UG 388										Beitzel/2
			MAT & SUPPLIES-GEN	MAT & SUPPLIES-POSTA	INVENTORY RESERVE	MAT & SUPPLIES-ODORA	INVENTORY-OFFICE SUP	MAT & SUPP-DIESEL AU	MAT & SUPP-UNLEADED	Total
			NWN/154001	NWN/154010	NWN/154039	NWN/154040	NWN/154050	NWN/154071	NWN/154073	OREGON
January	**2019**	**Actual**	13,698,939	265,235	(18,672)	152,276	31,313	13,066	79,889	12,175,659
February	**2019**	**Actual**	13,879,293	268,283	(18,672)	110,206	31,313	12,515	81,997	12,297,988
March	**2019**	**Actual**	14,645,373	174,387	(18,672)	80,116	31,313	12,964	81,087	12,847,297
April	**2019**	**Actual**	14,833,533	281,342	(18,672)	174,587	31,313	11,177	82,658	13,180,641
May	**2019**	**Actual**	15,591,061	310,590	(18,672)	161,117	31,313	10,423	80,844	13,840,478
June	**2019**	**Actual**	15,111,923	156,799	(18,672)	146,992	31,313	5,621	76,848	13,278,997
July	**2019**	**Actual**	14,478,745	289,783	(18,672)	240,581	31,313	7,109	71,425	12,927,528
August	**2019**	**Actual**	14,324,182	311,067	(5,223)	229,494	31,313	7,015	70,928	12,814,943
September	**2019**	**Actual**	14,029,406	195,697	(5,223)	217,365	31,313	5,416	70,745	12,451,903
October	**2019**	**Forecast**	14,139,693	249,469	(12,912)	178,441	36,027	26,602	117,266	12,614,450
November	**2019**	**Forecast**	14,257,492	248,100	(12,510)	178,488	36,160	27,293	120,257	12,717,778
December	**2019**	**Forecast**	14,375,291	246,731	(12,107)	178,535	36,294	27,984	123,248	12,821,106
January	**2020**	**Forecast**	14,493,090	245,362	(11,705)	178,582	36,428	28,674	126,239	12,924,434
February	**2020**	**Forecast**	14,610,888	243,992	(11,302)	178,630	36,562	29,365	129,229	13,027,762
March	**2020**	**Forecast**	14,728,687	242,623	(10,900)	178,677	36,696	30,056	132,220	13,131,090
April	**2020**	**Forecast**	14,846,486	241,254	(10,497)	178,724	36,830	30,746	135,211	13,234,419
May	**2020**	**Forecast**	14,964,285	239,885	(10,095)	178,771	36,964	31,437	138,201	13,337,747
June	**2020**	**Forecast**	15,082,084	238,516	(9,692)	178,818	37,098	32,128	141,192	13,441,075
July	**2020**	**Forecast**	15,199,883	237,147	(9,290)	178,866	37,231	32,819	144,183	13,544,403
August	**2020**	**Forecast**	15,317,682	235,778	(8,887)	178,913	37,365	33,509	147,173	13,647,731
September	**2020**	**Forecast**	15,435,481	234,408	(8,485)	178,960	37,499	34,200	150,164	13,751,059
October	**2020**	**Forecast**	15,553,279	233,039	(8,082)	179,007	37,633	34,891	153,155	13,854,388
November	**2020**	**Forecast**	15,671,078	231,670	(7,680)	179,055	37,767	35,582	156,146	13,957,716
December	**2020**	**Forecast**	15,788,877	230,301	(7,277)	179,102	37,901	36,272	159,136	14,061,044
January	**2021**	**Forecast**	15,906,676	228,932	(6,875)	179,149	38,035	36,963	162,127	14,164,372
February	**2021**	**Forecast**	16,024,475	227,563	(6,472)	179,196	38,168	37,654	165,118	14,267,700
March	**2021**	**Forecast**	16,142,274	226,193	(6,070)	179,244	38,302	38,344	168,108	14,371,028
April	**2021**	**Forecast**	16,260,073	224,824	(5,667)	179,291	38,436	39,035	171,099	14,474,357
May	**2021**	**Forecast**	16,377,871	223,455	(5,265)	179,338	38,570	39,726	174,090	14,577,685
June	**2021**	**Forecast**	16,495,670	222,086	(4,862)	179,385	38,704	40,417	177,081	14,681,013
July	**2021**	**Forecast**	16,613,469	220,717	(4,460)	179,433	38,838	41,107	180,071	14,784,341
August	**2021**	**Forecast**	16,731,268	219,348	(4,057)	179,480	38,972	41,798	183,062	14,887,669
September	**2021**	**Forecast**	16,849,067	217,979	(3,655)	179,527	39,106	42,489	186,053	14,990,997
October	**2021**	**Forecast**	16,966,866	216,609	(3,252)	179,574	39,239	43,180	189,043	15,094,326
November	**2021**	**Forecast**								15,197,654
December	**2021**	**Forecast**								15,300,982

								Base Year System (000)		12,780
Rate Base Elements		**3 Year Avg**	**Base Year**	**Test Year**				**Test Year System (000)**		14,474
Oregon		10,775	12,780	14,474						
Allocation Factor (Distribution Plant)			85.6%							
Increase vs Base Year				1,694						
Increase vs 3 Year Avg				3,699						

CASE: UG 388

WITNESS: RUSSELL (RUSS) BEITZEL

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 505

Exhibits in Support of Testimony

April 17, 2020

Staff/505
Beitzel/1

NW Natural													Staff/505
Docket No. UG 388													Beitzel/1
OREGON NON LABOR CUSTOMER ACCOUNTING EXPENSES													
FERC ACCT		2017	2018	2019	2020	2021	3 Year Avg	Test Yr-Avg	% vs Avg	Test Yr-2019	% vs 2019	CPI Growth	Test Yr vs Growth
901	Supervision	2,983	2,523	3,754		3,157	3,086	71	2%	(596)	-16%	3,886	(729)
902	Meter Reading	54,015	57,467	62,185		63,727	57,889	5,838	10%	1,542	2%	64,381	(653)
903	Cust Records/Coll	4,889,136	5,133,940	4,905,648		7,507,778	4,976,241	2,531,537	51%	2,602,130	53%	5,078,847	2,428,931

Staff/505
Beitzel/2

NW Natural													Staff/505
Docket No. UG 388													Beitzel/2
OREGON NON LABOR CUSTOMER SERVICES AND SELLING EXPENSES													
FERC ACCT		2017	2018	2019	2020	2021	3 Year Avg	Test Yr-Avg	% vs Avg	Test Yr-2019	% vs 2019	CPI Growth	Test Yr vs Growth
908	CUSTOMER ASSISTANCE EXPENSE	502,421	414,319	650,629		702,897	522,456	180,441	35%	52,268	8%	673,600	29,297
910	MISC CUSTOMER SERVICE	90,971	49,315	166,269		35,769	102,185	(66,416)	-65%	(130,500)	-78%	172,139	(136,370)
911	SALES SUPERVISION EXPENSE	13,518	284	271		(3,657)	4,691	(8,349)	-178%	(3,929)	-1447%	281	(3,939)
912	DEMONSTRATION & SELLING EXP	1,719,048	960,292	929,190		899,822	1,202,844	(303,022)	-25%	(29,369)	-3%	961,996	(62,174)

Staff/505
Beitzel/3

NW Natural													Staff/505
Docket No. UG 388													Beitzel/3
OREGON NON LABOR ADMIN AND GENERAL EXPENSES													
FERC ACCT		2017	2018	2019	2020	2021	3 Year Avg	Test Yr-Avg	% vs Avg	Test Yr-2019	% vs 2019	CPI Growth	Test Yr vs Growth
921	Off Supply	16,635,731	19,112,704	19,169,769		22,005,265	18,306,068	3,699,197	20%	2,835,495	15%	19,846,577	2,158,688
922	Admin Exp transfer	(11,998,357)	(12,444,414)	(12,383,224)		(15,486,315)	(12,275,332)	(3,210,983)	26%	(3,103,091)	25%	(12,820,426)	(2,665,889)
930	Misc General	2,644,788	2,864,927	3,137,850		3,266,976	2,882,522	384,454	13%	129,126	4%	3,248,635	18,341
931	Rents	4,263,746	4,342,285	4,170,545		9,473,646	4,258,859	5,214,787	122%	5,303,100	127%	4,317,791	5,155,855

CASE: UG 388
WITNESS: MITCHELL MOORE

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 600

Opening Testimony

April 17, 2020

Q. Please state your name, occupation, and business address.

A. My name is Mitchell Moore. I am a Senior Utility Analyst employed in the Energy Economic Analysis Program of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE., Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. My witness qualification statement is found in Exhibit Staff/601.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to address Northwest Natural's revenue requirement for the following issues: Operations and Maintenance (O&M) Expense; Plant Maintenance; and Employee Benefits.

I recommend the following adjustments:

O&M – ($1,709,000)

Plant Maintenance – ($875,000)

Medical Benefits – ($348,000)

Q. Did you prepare an exhibit for this docket?

A. Yes. I prepared the following exhibits:

- Exhibit Staff/601 – Qualifications exhibit.
- Exhibit Staff/602 – Workpapers showing adjustment calculations for O&M and Plant Maintenance.

Q. How is your testimony organized?

A. My testimony is organized as follows:

Issue 1, ------ Operations and Maintenance Expense 3
Issue 2, ------ Plant Maintenance..... 7

Issue 3, ------ Employee Benefits……9

ISSUE 1. OPERATIONS AND MAINTENANCE EXPENSE

Q. Please describe distribution O&M expense.

A. Distribution O&M (operations and maintenance) refers to those expenses and activities recorded in FERC accounts 870-894, and include operation, supervision and engineering, distribution load dispatching, compressor station and regulator station expenses and customer installations expenses.

Q. What is the Company's proposal for distribution O&M expenses?

A. Northwest Natural is proposing to include approximately $54 million in distribution O&M expense (FERC Accts 870-894) in its test year expense. This represents an increase of 15.6 percent over the $46.7 million in the base year.[1] The majority of this – approximately $39.6 million - is labor expense. For non-labor expense, the Company proposes an increase in distribution O&M expense from $12.2 million in the base year to $14.4 million in the test year.[2] This represents an increase of $2.2 million, or more than 18 percent over the 2019 base year.

My testimony only addresses non-labor expense. Please see Staff Witness Heather Cohen's testimony in Staff 400 addressing the labor portion of distribution O&M.

[1] See NW Natural/1007.
[2] NW Natural Response to SDR 58.

Q. How does NW Natural explain the increase in non-labor distribution O&M expense?

A. In its opening testimony, the Company points to increasing contract costs for locating services.[3] The Company negotiated a new agreement with its contract company, Locating, Inc., which calls for a 2.2 percent annual increase in rates. In addition, the Company explains that an increasing number of customers and increased customer education has led to an average five percent annual increase in the number of locating service calls it receives.[4]

Additionally, the Company escalates its general non-labor expense using the West Region Urban CPI – a higher escalation factor than the All-Urban CPI that Staff uses.[5] Overall escalation factors are addressed by Staff Witness Marianne Gardner in Staff 100.

Q. Please describe your review and analysis of NW Natural's distribution O&M expenses.

A. Staff first reviewed the distribution O&M expenses for the historical calendar years of 2017, 2018, and 2019. This review included looking at trends, transactional details, and adjustments proposed by NW Natural.

Staff initially looked at the annual increase in non-labor distribution O&M expenses for the past three years to determine whether the proposed increase in the test year is consistent with historical expenses. Staff also reviewed

[3] See UG 388 NW Natural/900, Davilla/13.
[4] See UG 388 NW Natural/906, Davilla *confidential*.
[5] See UG 388 NW Natural/900, Davilla/9.

transaction details from the base year expense (2019) to ensure expenditures are justifiable for normal utility operations.

Q. What does Staff conclude from its review?

A. A trend analysis suggests that proposed test year expenses are out of line with expense trends over previous years. This category of expense decreased 5.1 percent in 2018 over 2017. In 2019, expenses increased 2.3 percent over 2018. Then, for the 2021 test year, non-labor distribution expense jumps 18.4 percent. An increase of this magnitude cannot be explained solely by the increase in locating costs.

In 2019, locating expense comprised about 56 percent of the total expenses booked to FERC account 874. The Company projects a 28.6 percent increase to this account in the test year – far higher than the five percent year-over-year increase explained in its opening testimony.

There is a larger issue as well. In reviewing transaction level detail for base year 2019 expenses, there is approximately $365,000 in expense for which the Company does not provide a description.

Q. Has the Company been able to explain these expenses?

A. No. In Staff's initial review of transaction detail provided in the Company's response to standard data request No. 57, Staff found a large number of transactions that did not contain a description of the expense. Staff issued an additional data request to obtain the missing information. The Company was

able to supply the information for some of the transactions, but not all.[6] A similar issue occurred in the Company's previous rate case, UG 344.

Q. What is Staff's recommended remedy?

A. Staff recommends disallowing Test Year expense if the Company cannot provide adequate justification or description for the base year expense. The Commission sets customer rates that are just and reasonable. It is not possible to tell if this standard is met if the Staff cannot tell whether the Company's expenses underlying its Revenue Requirement are reasonable.

Q. What is Staff's recommended adjustment?

A. Staff recommends an adjustment of ($1.71) million from the test year. This adjustment reflects the disallowance of unexplained base year expenses, escalated by the all-urban CPI to 2021.[7]

[6] NW Natural Response to Staff DR No. 173.
[7] Both NW Natural and Staff use escalation factors of base year expense to forecast test year expense. As noted above, Staff uses a different escalation factor than NW Natural. Please refer to Staff witness Marianne Gardner (Staff/100) for discussion of Staff's escalation factor vs NW Natural's.

ISSUE 2. PLANT MAINTENANCE

Q. What is General Plant Maintenance?

A. These expenses, booked to FERC account 935, refer to labor, materials and expenses associated with the maintenance of general property such as building facilities, office furniture and equipment and communications equipment.

Q. What does NW Natural propose for Plant Maintenance in this proceeding?

A. The Company includes $4.9 million in the test year for general plant maintenance, a $1.1 million increase over the 2019 base year.[8] The non-labor portion of the test year expense is $2.87 million, an increase of 0.92 million over the 2019 base year.[9]

Q. Please describe your review and analysis of NW Natural's distribution O&M expenses.

A. Staff first reviewed general plant maintenance expenses for the historical calendar years of 2017, 2018, and 2019. This review included looking at trends, transactional details, and adjustments proposed by NW Natural. Staff initially looked at the annual increase in non-labor expenses for the past three years to determine whether the proposed increase in the test year is consistent with historical expenses. Staff also reviewed transaction details from

[8] See UG 388 Exhibit 1007.
[9] See Company response to SDR No. 058.

the base year expense to ensure expenditures are justifiable for normal utility operations.

Q. What does Staff conclude from its review?

A. As with NW Natural's distribution O&M expense, there is a similar issue in the transaction-level detail provided by NW Natural in that many line item expenses are missing transaction descriptions. Without adequate documentation, Staff cannot determine if the expense was reasonable.

In Staff's initial review of transaction detail provided in the Company's response to SDR No. 57, Staff found a large number of transactions that did not contain a description of the expense. Staff issued an additional data request to obtain the missing information. The Company was able to supply the information for some of the transactions, but not all.[10]

Accordingly, Staff makes a similar adjustment by removing 2019 base year expenses that do not contain a description and scaling up the remaining amount by the All-Urban CPI.

I recommend an adjustment of ($875,000) from the Company's 2021 test year.

[10] NW Natural Response to Staff DR No. 173.

ISSUE 3. EMPLOYEE BENEFITS

Q. Please describe the Company's request regarding medical, dental, vision, and other employee benefits.

A. The Company has requested approximately $23.8 million in test year expenses relating to medical, dental, and other employee benefits on an Oregon-allocated basis. In addition to health insurance, this cost includes such forms of compensation as long-term disability benefits, family leave, and a 401k matching program. The expense includes costs for both bargaining (union) and non-bargaining (non-union) employees.

Benefit plan premiums are shared between the Company and the employees. The Company shares costs with employees at a ratio of 80/20 or 85/15 (i.e. employees pay either 15 or 20 percent of premium costs and the Company pays 80 or 85 percent, depending on the plan selected). The Company's request represents a 12.4 percent increase in medical costs and 13 percent increase per FTE over the 2019 base year. The test year amount also includes a 15 percent increase per FTE for 401K matching benefits over the base year.

Q. Please describe the analysis performed by Staff.

A. Staff performed a trend analysis, looking at the year-over-year increase to benefits. For medical costs, Staff compared those to national average costs as reported by the Kaiser Foundation benefits survey.

On a per employee basis, the Company includes $15,129 for medical and dental benefits in the test year. As a comparison, the national average healthcare premiums as determined by the Kaiser Foundation are broken down

by single and family levels of coverage. National average healthcare premiums in 2019 were $7,188 for single coverage and $20,576 for family coverage.

In comparing the rate of increase in national average family premium costs with NW Natural per-FTE premium costs, Staff finds NW Natural costs appear to be rising faster than the national average. National average costs rose 3.4 percent in 2017, 4.5 percent in 2018, and 4.9 percent in 2019. In contrast, NW Natural's per-FTE costs rose 6.2 percent per year from 2019 to 2021. While unable to determine national average forward-looking healthcare costs, Staff finds it reasonable to adjust the NW Natural increase downward based on the recent national average increases.

Accordingly, I recommend an adjustment based on an average five percent year over year increase from the base year to the test year, which is an adjustment of (347,715) to 2021 medical benefits.

Q. Does Staff recommend any adjustment for NW Natural's 401k matching benefit?

A. No. The 15 percent increase in per-FTE 401k matching benefit resulted from an updated bargaining agreement with bargained-for employees.[11] The Company 401k match rose from 50 percent of the first six percent of salary contributed by employees to 50 percent of the first 8 percent of salary. Total 401K matching contribution is four percent of an employee's salary. This is below the national average 4.7 percent matching employer contribution as

[11] NW Natural response to SDR No. 063.

reported by Fidelity in its 2019 Retirement Analysis.[12] Because the benefit is part of a bargaining agreement of total compensation, and remains below the national average employer contribution, Staff concludes the amount is reasonable.

Q Does this conclude your testimony?

A. Yes.

[12] See https://www.fidelity.com/bin-public/060_www_fidelity_com/documents/press-release/quarterly-retirement-trends-050919.pdf.

CASE: UG 388
WITNESS: MITCHELL MOORE

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 601

Witness Qualifications Statement

April 17, 2020

WITNESS QUALIFICATIONS STATEMENT

NAME: Mitchell Moore

EMPLOYER: Public Utility Commission of Oregon

TITLE: Senior Utility Analyst
Energy Rates, Finance and Audit Division

ADDRESS: 201 High Street SE. Suite 100
Salem Oregon 97301-3612

EDUCATION: Bachelor of Arts, Journalism and Political Science
University of Hawaii at Manoa (1992)

EXPERIENCE: I have been employed by the Public Utility Commission of Oregon since 2009, with my current position being a Senior Utility Analyst in the utility program's Energy Rates, Finance and Audit division.

My prior position at the Commission was as a Senior Telecommunications Analyst, where my assignments included reviewing carrier interconnection agreements, wholesale service quality, and resolution of carrier-to-carrier complaints.

Prior to my utility regulatory career, I worked with AT&T as a loop electronics coordinator, designing and implementing high-speed broadband and fiber optic services in Los Angeles. I have also worked as an outside plant design engineer with Qwest Corporation, and I spent several years as a newspaper reporter with the Honolulu Star-Bulletin.

CASE: UG 388
WITNESS: MITCHELL MOORE

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 602

Exhibits in Support
Of Opening Testimony

April 17, 2018

Staff Exhibit 602

is filed in electronic format

CASE: UG 388
WITNESS: SABRINNA SOLDAVINI

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 700

Opening Testimony

April 17, 2020

Q. Please state your name, occupation, and business address.

A. My name is Sabrinna Soldavini. I am a Senior Regulatory Analyst employed in the Energy Finance and Audit Division of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE., Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. My witness qualification statement is found in Exhibit Staff/701.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to support Staff's adjustments to NW Natural's (NWN or Company) proposed Miscellaneous Operating Revenues and Affiliate & Jurisdictional Cost Allocations.

Q. Did you prepare an exhibit for this docket?

A. Yes. I prepared the following exhibits:

1. Exhibit Staff/702, NWN Responses to Staff Data Requests
2. Exhibit Staff/703, NWN Confidential Response to Staff Data Request 218
3. Exhibit Staff/704, NARUC Guidelines for Cost Allocations and Affiliate Transactions
4. Exhibit Staff/705, NWN 2018 Master Services Agreement and Cost Allocation Manual From NWN 2018 Affiliated Interest Report

Q. How is your testimony organized?

A. My testimony is organized as follows:

Issue 1. Miscellaneous Operating Revenues 2
Issue 2. Affiliate & Jurisdictional Cost Allocations 9

ISSUE 1. MISCELLANEOUS OPERATING REVENUES

Q. How does NW Natural define Miscellaneous Operating Revenues?

A. NW Natural defines miscellaneous revenues as those revenues collected by the Company from customer fees collected through Schedule C, Miscellaneous Charges, as well as revenues from property rentals. Schedule C customer charges includes late payment charges, service reconnection charges, curtailment charges, inaccessible meter charges, etc.

Q. How do Miscellaneous Operating Revenues affect the revenue requirement?

A. Miscellaneous revenues serve as an offset to revenue requirement in a rate case. For example, if the Company includes $5 million in miscellaneous revenues in the test year, this $5 million serves as an offset, or reduction to revenue requirement as the Company no longer needs to collect this amount through retail rates.

Q. What level of Miscellaneous Operating Revenues has the Company included in the Base and Test Year?

A. NW Natural reported $6.28 million in miscellaneous revenues in a proxy Base Year (the twelve months ended September 31, 2019) in this rate case.[1] For its Test Year, the Company has proposed to include approximately $3.37 million in miscellaneous revenues, an approximately $2.9 million dollar decrease from the Base Year.[2] In its testimony, the Company notes two “extraordinary”

[1] NWN Exhibit/1002, Walker/1.
[2] *Ibid*.

events, which lead to miscellaneous revenues during the Base Year that the Company says should be excluded from the Test Year. These two extraordinary events in the proxy Base Year are the Enbridge pipeline explosion that lead to curtailment on October 10th through the morning of October 11th and the nine gas days from February 25 through March 5, 2019, which also generated significant curtailed revenues.[3]

Q. What methodology does the Company use to calculate Miscellaneous Revenues in the Base Year?

A. In its testimony, the Company states that its Test Year adjustment reflects the difference between Base Year Miscellaneous Revenue and the Test Year. The Company uses a simple three year trend to establish Test Year revenues "based on three years of historical data. If amounts were trending upward or downward, the most recent year was taken as representative for the forecast."[4]

Q. Has Staff compared the Company's proxy Base Year to the actual Base Year accounting data?

A. Yes. Staff requested data on the Company's actual 2019 miscellaneous revenues, inclusive of the final three months of 2019. The actual Oregon miscellaneous revenues for 2019, excluding curtailment revenues (which will be discussed below) were $3,577,939 million. This is approximately $206,000 higher than the amount of miscellaneous revenues in the proxy Base Year initially proposed by the Company. Staff recommends that the Test Year

[3] NW Natural/1000, Walker/13-14.
[4] *Ibid.*

miscellaneous revenues by adjusted upward by $206,125 to match 2019 miscellaneous revenues.[5]

Q. Does Staff have any other issues with the Company's proposed miscellaneous revenue in the Test Year?

A. Yes. As stated above, the Company's proxy Base Year includes $6.28 million in miscellaneous revenues. Of this $6.28 million, approximately $2.7 million is generated from curtailment revenues resulting from the two extraordinary events cited in the Company's opening testimony.[6] NW Natural argues that such extraordinary curtailment revenue should be excluded from Test Year, and in essence proposes to exclude the issue from the rate case in any substantive way.[7]

Q. Why does the Company propose to exclude Base Year curtailment revenue?

A. The Company notes that the last system-wide curtailment (prior to the two in the proxy Base Year) occurred in 2009, and that it is unlikely there will be another pipeline explosion. As such, the Company states that "these penalties are not anticipated during the Test Year"[8] and should therefore be excluded from rate making in this docket. Essentially, the Company is arguing that because the events that led to the level of revenues generated from

[5] Staff notes that no escalation is necessary for miscellaneous revenues as there is no proposed change to Schedule C fees in this docket. Additionally, though it is common for Staff to recommend escalation to account for an increase in customer count in the Test Year, Staff notes that in this case, the Company has seen a decrease in late and reconnect fees over a three year period that has seen customer growth.
[6] NWN Exhibit/1002, Walker/1.
[7] NWN/1000, Walker/13.
[8] *Ibid*.

interruptible customers failure to voluntarily curtail themselves (as they were called on to do by the Company) in the Base Year are unlikely to occur in the Test Year they should be excluded. The Company's view is that these penalties should not be included as an offset to revenue requirement in the Test Year, as well as all years between the Test Year and when the Company files its next rate case.

Q. Does Staff agree with the Company that the Base Year curtailment revenue is exceptional, and should not be considered when setting the revenue requirement in the test year?

A. Staff does agree with NW Natural that the $2.7 million in curtailment revenues generated in the proxy Base Year is a result of the Enbridge pipeline explosion and its resulting consequences is outside of what the Company would reasonably expect to collect on annual basis given its history of infrequent curtailment.

Staff requested curtailment data from the Company from 2009 to 2019, and found that the average annual curtailment revenue generated was **[Begin Confidential]** [redacted] **[End Confidential]**. However, this average is rather skewed, with **[Begin Confidential]** [redacted] **[End Confidential]** of the revenue coming in 2018 and 2019, and **[Begin Confidential]** [redacted] **[End Confidential]** percent coming in the years 2009, 2018, and 2019. Curtailment revenue generated in the years 2010 to 2017 was just **[Begin**

Confidential] [redacted] **[End Confidential]**.[9] Therefore, Staff agrees that the most appropriate place for these revenues is not the revenue requirement. Including a $2.7 million offset to revenue requirement in this rate case would lock this level of curtailment revenue in place until the Company's next rate case, which is likely not suitable given the volatile nature of this revenue. However, Staff rejects the Company's proposal to not use any of its curtailment revenue to the benefit of customers.

Q. How is curtailment revenue generated?

A. According to the Company's Schedule C, Miscellaneous Charges, interruptible customers who fail to comply with a curtailment order are charged an "Unauthorized Use" charge of $10 per therm. In the case of the curtailment revenue generated in the Company's Base Year, this means that interruptible customers were either unable or unwilling to comply with curtailment orders during the two extraordinary instances cited by the Company to the tune of approximately $2.7 million dollars, which at $10 per therm equates to 270,000 therms.

Q. How does Staff propose to treat curtailment fee revenue generated through Schedule C?

A. In this instance, Staff proposes that the approximately $2.7 million in Oregon allocated "Unauthorized Use" curtailment fee revenue in the proxy Base Year be passed through as an offset to firm customers in NW Natural's 2020

[9] *See* Staff Miscellaneous Revenues Workpaper, "UG 388 Adj Soldavini 700 Issue 1 – Miscellaneous Revenue CONF".

Purchased Gas Adjustment (PGA). Further, Staff proposes that in each year curtailment fee revenue generated by Schedule C is greater than $250,000 dollars that this amount be passed through as a credit to firm customers in the Company's next PGA.

Q. Why does Staff believe this is the appropriate treatment?

A. Typically, when conducting a cost of service study, such as the Long Run Incremental Cost Study (LRIC) performed by NW Natural in this docket, interruptible customers get a break in terms of capacity cost allocation. The theory is that an interruptible customer is willing to take the risk of being interrupted or disconnected from utility service during periods of peak demand. As the utility believes that interruptible customers can be called on to be off-system during periods of peak demand, this reduces the overall capacity costs for the utility, and therefore the interruptible customer is not allocated these costs.

Q. Has NW Natural assigned capacity costs to interruptible customers in this docket?

A. It appears not. From the Company's LRIC study, it can be seen that interruptible customers have not been assigned capacity costs, in line with the theory of charging customers for peak capacity costs as Staff described above.[10] Therefore, when these interruptible customers were called on to voluntarily curtail themselves, but failed to comply, they were using peak

[10] Exhibit Staff/702, Soldavini/2, NW Natural Response to SDR 112 Attachment 1, "Inc Investment tab".

capacity that has been and is being paid for by the firm customers who are allocated these capacity costs when rates are set. As such, Staff finds it is appropriate to compensate firm customers for the use of peak capacity by non-firm customers.

Q. How did Staff determine the $250,000 Unauthorized Use threshold for the offset to future PGAs?

A. Staff tried to choose a level that represented a meaningful level of curtailment revenues. Setting the threshold at $250,000 means that 25,000 therms had been deemed Unauthorized Use by interruptible customers (at $10/therm). In Staff's view, the usage of 25,000 therms by interruptible customers during periods of peak demand, when they had been called on to reduce their demand, is an appropriate and meaningful level of Unauthorized Use, which should be accounted for in future years.

Q. What is Staff's overall recommendation for Miscellaneous Revenues?

A. Staff recommends an adjustment of $206,125 to Miscellaneous Operating Revenues in the Test Year to reflect actual 2019 Miscellaneous Operating Revenues. Staff additionally recommends that moving forward, if the annual revenue generated from the Unauthorized Used fee in Schedule C is greater than $250,000, this revenue be passed through as a credit to firm customers in the Company's next PGA. In regards to the Company's proposal to exclude proxy Base Year curtailment revenues from the Test Year, Staff recommends the Commission require the Company to credit firm customers the approximately $2.7 million in curtailment fee revenue in the 2020 PGA.

ISSUE 2. AFFILIATE & JURISDICTIONAL COST ALLOCATIONS

Q. Please explain the Commission's historical treatment of cost allocation among affiliates.

A. The Commission's historical treatment of cost allocation among affiliates is pursuant to OAR 860-027-0048 (Allocation of Costs by an Energy Utility), which addresses the allocation of costs between an energy utility and its affiliates, outlining how transactions should be recorded. OAR 860-027-0048 also states that an energy utility must keep a current Cost Allocation Manual (Allocation Manual), with detailed methodology on how costs are allocated between affiliates on file with the Commission, and states the Allocation Manual shall be "filed yearly as an appendix to the Affiliated Interest Report required under OAR 860-027-0100."[11]

Staff analyzes the Allocation Manual for reasonableness in how costs are allocated between NW Natural and its affiliates. Staff also compares methodologies used by the Company for compatibility with the National Association of Regulatory Commissioners' (NARUC) Guidelines for Cost Allocations and Affiliate Transactions.[12]

Q. How, generally, does NW Natural allocate costs among its affiliates?

A. In 2017, the Commission approved NW Natural's reorganization into a holding company structure.[13] Upon the completion of the reorganization in 2018, Northwest Natural Holding Company (Hold Co.) became the parent company

[11] OAR 860-027-0048(6).
[12] Exhibit Staff/704, NARUC Guidelines for Cost Allocations and Affiliate Transactions.
[13] Order No. 17-526.

of NW Natural. Under the new Hold Co. structure, NW Natural continues to provide and receive services to and from its affiliated interests ("affiliates"). Transactions between NW Natural and affiliates are governed by a Master Services Agreement (MSA) and by NW Natural's cost allocation manual (CAM). Each year, NW Natural files an affiliated interest report with the Commission in Docket No. RE 8. This report identifies transactions between NW Natural and its affiliates and contains NW Natural's CAM.

Typical affiliated transactions that occur between NW Natural and its affiliates include: direct charges of NW Natural's payroll and administrative expense for affiliate use of NW Natural's staff, payments between NW Natural and affiliates for tax expense or benefit, annual allocation of indirect charges per the Allocation Manual, vendor payments made by NW Natural on behalf of affiliates, and equity distributions/contributions and dividends between NW Natural and affiliates.[14]

Per NW Natural's Allocation Manual, "the approach to allocating costs is to directly assign costs when applicable and to allocate costs based on the primary cost driver of the common cost, or relevant proxy, and to ensure that unauthorized subsidization of unregulated activities by regulated activities, and vice versa, does not occur." The Allocation Manual also states that "goods or services provided by the utility to an affiliate are provided at the higher of cost or market price."[15]

[14] Staff Exhibit/705, Soldavini/2, NWN 2018 Cost Allocation Manual and Master Services Agreement as filed in RG 8.
[15] *Ibid.*

Q. Please describe the Commission's historical treatment of cost allocation among state jurisdictions.

A. Staff also reviews how the Company allocates costs amongst its state jurisdictions: Oregon and Washington. Staff reviews applicable formulas and models to verify that Oregon is being allocated costs based on the actual burden caused by the Company's Oregon jurisdiction, to ensure Oregon ratepayers are not paying more than their fair share of costs.

Q. Please describe how Northwest Natural allocates costs between state jurisdictions?

A. NW Natural allocates shared costs between the Company's two state jurisdictions according to a number of allocation factors, as outlined by the Company's Allocation Manual. In total, the Company has included 27 unique jurisdictional allocation factors in this filing.[16] Common jurisdictional allocators include a 3-factor allocation (a simple average of gross plant directly assigned, number of employees directly assigned, and number of customers), a customer count allocation factor, and volume allocation factors. The range of Oregon allocation factors ranges from 70 percent for the Regulatory allocation factor to 96.689 percent for Environmental Administration Costs as shown in the table below.

[16] NWN Exhibit 1014 – WP1 – Allocation Factors.

NW Natural
State Allocation Factors
As of September 30, 2019

	Allocation Factors - Summary	Oregon	Washington
1	Customers-all	88.660%	11.340%
2	Customers-Residential	88.550%	11.450%
3	Customers-Commercial	89.670%	10.330%
4	Customers-Industrial	92.170%	7.830%
5	Customers-The Dalles	74.780%	25.220%
6	3-factor	88.590%	11.410%
7	firm volumes	89.360%	10.640%
8	sales volumes	89.830%	10.170%
9	sendout volumes	91.410%	8.590%
10	sales/sendout volumes	90.620%	9.380%
11	Customers Portland/Vancouver	84.450%	15.550%
12	Customers Portland/Vancouver 80%	87.560%	12.440%
13	Customers Portland/Vancouver Commercial	84.660%	15.340%
14	Payroll	89.647%	10.353%
15	Admin Transfer	88.284%	11.716%
16	Employee Cost	89.405%	10.595%
17	Regulatory	70.000%	30.000%
18	Telemetering	87.755%	12.245%
19	Direct-WA	0.000%	100.000%
20	Direct-OR	100.000%	0.000%
21	Gross plant direct assign	88.110%	11.890%
22	Transmission	98.791%	1.209%
23	Depreciation	88.410%	11.590%
24	Rate Base	87.108%	12.892%
25	Distribution	85.611%	14.389%
26	Perimeter	93.750%	6.250%
27	Environmental Admin Costs	96.680%	3.320%

Q. Please summarize Staff's analysis of the Company's affiliate and cost allocation methodology.

A. In the Company's initial responses to Staff's Standard Data Requests, the company included an outline of how costs are allocated among state jurisdictions and between affiliates. Staff requested transactional level detail to review cost allocation between the Company and its affiliates and non-regulated entities. Staff reviewed the Company's affiliated interest report, including its MSA and Allocation Manual as well as transactions between NW Natural and its affiliates. Staff's review focused on ensuring allocation factors

are calculated and applied correctly, and in adherence with cost allocation principles outlined in NARUC's cost allocation manual and referenced above. Staff notes that the Company is not proposing updates to its cost allocation methodology in this filing. Staff has reviewed the Company's allocation factors, including the derivation of said factors and responses to Staff data requests, and generally finds the formulas to be reasonable and consistent, and based on cost drivers as outlined in NARUC's cost allocation manual. Staff supports the decision to directly assign costs wherever possible, as direct assignment ensure that the entity responsible for creating the cost (the cost causer/driver) is bearing the burden of the cost.

Q. Does Staff have any concerns regarding how NW Natural allocated costs to Oregon in this filing?

A. Yes. Staff's review found three issues with the Company's proposed affiliate and cost allocations in this rate case:

1. Investor and Shareholder Expenses;
2. Regulatory Expenses that Should be Directly Allocated; and
3. Executive Time Charging to Affiliates.

Investor and Shareholder Expense

Q. What shareholder and investor expenses are included in the Base Year?

A. NW Natural includes approximately $251,000 (Oregon allocated) in shareholder and investor relations expense in the Base Year.[17]

Q. Why is Staff concerned with the inclusion of shareholder expenses in this rate case?

A. To be clear, Staff realizes that there are some benefits to customers in maintaining relationships with investors. Indeed, maintaining relationships with investors helps the Company raise necessary capital. However, Staff finds it inappropriate that ratepayers are expected to pay 100 percent of such costs.

Q. What is Staff's recommendation?

A. Staff recommends these expenses be shared with shareholders via a 50/50 split. This results in a 50 percent reduction in shareholder and investor expenses, and a $125,520 reduction in Base Year expense. After escalating for inflation between the Base and the Test Years using the CPI, All Urban Consumers for 2020 (1.8 percent) and 2021 (1.7 percent), this leads to an adjustment of ($129,952) in the Test Year.[18]

Regulatory Expense

Q. Please summarize this issue.

A. The allocation factor for shared (allocated) regulatory expenses is a 70/30 split, meaning that for shared regulatory costs Oregon is allocated 70 percent of such costs, while Washington is allocated the remaining 30 percent. However, in Staff's review of the Company's transactional data, Staff came across a

[17] *See* Staff Shareholder Services & Investor Relations Expense Workpaper, "UG 388 Exh 700 Issue 2 Shareholder Services & Investor Relations Expense Soldavini CONFIDENTIAL".
[18] Oregon Office of Economic Analysis, Oregon Economic Forecast, Appendix A, page 42.

number of charges that appear to be directly related to Washington regulatory costs that should therefore be directly assigned to Washington, which are in fact being allocated using the regulatory allocation factor – meaning that Oregon is being allocated 70 percent of these costs.

Q. What level of Washington regulatory costs have been included in this rate case?

A. In the Base Year, Staff found approximately 113 line items in the Company's transactional data related to Washington regulatory expense. While it is true that many of these charges are offset by a corresponding credit in the transactional data, there are still approximately $137,000 of regulatory costs inappropriately allocated to Oregon rate payers.[19]

Q. What is Staff's recommendation?

A. After adjusting for inflation in years 2020 and 2021 using the CPI all urban index, Staff recommends a ($141,700) adjustment to the Test Year to account for erroneously allocated regulatory charges.

Q. In the interest of fairness, did Staff find any regulatory costs that should have been allocated directly to Oregon?

A. Yes. To ensure that Staff's recommendation to directly assign regulatory costs when possible, Staff reviewed the Company's transactions that use the regulatory allocation factor for expenses that should have been 100 percent allocated to Oregon. Staff found a number of line items related to Oregon

[19] Staff notes that this $137k is comprised of $101k in what Staff has determined to be Washington regulatory expenses and $36k in ambiguous regulatory expense which Staff removed as it is unclear to which jurisdiction these costs should actually be assigned.

general rate cases, and Docket No. UM 1909 and UM 2004 that should have been directly allocated to Oregon, but were instead allocated via the regulatory allocation factor, meaning that Oregon was in fact only allocated 70 percent of these costs (and Washington the remaining 30 percent). For parity, Staff added 30 percent to these costs, which led to an approximately $49,000 increase in Oregon allocated regulatory affairs expense in the Test Year.[20]

Combined with the removal of erroneously charged regulatory expenses, Staff is recommending a ($92,550) adjustment to the Test Year.

Executive Timekeeping to Affiliates

Q. Please summarize this issue.

A. As Staff previously mentioned, since the reorganization and formation of Hold Co. NW Natural continues to provide services to and receive services from its affiliates. This includes providing staffing services to Hold Co. and its subsidiaries. Among Hold Co.'s wholly owned subsidiaries is NW Natural Water Company, LLC (NW Natural Water). Since the creation of NW Natural Water in 2017, NW Natural Water has acquired at least seven water companies in several states, including Oregon, Washington, Idaho, and Texas.[21] In Staff's review, Staff determined that NW Natural employees including NW Natural executives have been, and are currently involved in

[20] *See* Staff Regulatory Expense Workpaper, "UG 388 Exh 700 Issue 2 Regulatory Expense Soldavini CONFIDENTIAL".
[21] Per its website, nwnaturalwater.com, as of April 14, 2020, NW Natural Water currently maintains Sunriver Water and Environmental, Falls Water Company, Suncadia Water and Wastewater, T&W Water Service Company, Salmon Valley Water Company, Gem State Water, and Cascadia Water.

merger and acquisition work.[22] However, Staff is concerned that executives have not charged enough time to non-utility accounts to account for their work on affiliate and non-utility projects including their work on NW Natural Water acquisitions.

Q. Does Staff believe that NW Natural executives are not tracking time in accordance with their MSA and Allocation Manual?

A. Staff does not have the necessary evidence to definitively state that the Company is violating the policies outlined in their MSA and CAM. However, part of the reason it is difficult for Staff to definitively make such a claim is that the Company's policy regarding executive time tracking should be modified or explicitly clarified. According to the Company, executives charge time to non-utility only when such work is in excess of 30 minutes per day, consistent with its Allocation Manual.[23] What is unclear is whether the Company requires this time be tracked for all hours in the day, or on the basis of an 8-hour workday. In the Company's last rate case, it noted that "executive only charge for time in increments in excess of 0.5 hours during an 8-hour work day."[24]

Q. Why does Staff believe this point needs clarification in the Company's Allocation Manual?

A. Without explicit clarification, this policy means that any time spent on non-utility projects outside of an 8-hour workday would be paid for by NW Natural ratepayers. Additionally, Staff is unsure how the 8-hour workday (or FTE)

[22] Staff Exhibit/702, Soldavini/8, NWN Response to Staff Data Request 343.
[23] Exhibit Staff/702, Soldavini/3, NWN Response to Staff Data Request 307.
[24] Docket No. UG 344 NW Natural/1700, Moncayo/59.

caveat to this time tracking policy is even relevant in the context of executives' time tracking. As exempt employees, there is no reasonable expectation that executives work only 8 hours in a day. In fact, when sharing executives with affiliates, including one (NW Natural Water) that is consistently involved in company acquisitions, it appears evident that executives might often work in excess of 8 hours in a day.

Staff is concerned that the way this policy has been interpreted may allow NW Natural executives to entirely exclude any time spent working on affiliate projects on some days. As an example, an executive spends eight hours working on NW Natural activities and two and half hours on non-utility activities in a particular day. If in fact the policy is to only charge time in excess of 30 minutes per eight hour day, then zero percent of that day would be charged to non-utility time, and NW Natural ratepayers would pay 100 percent of the cost. In essence, this allows NW Natural's affiliates to receive free executive level work and leaves NW Natural's Oregon and Washington ratepayers to pick up the tab when in fact, the cost of such activities should be borne by either the affiliates themselves or Hold Co. shareholders who benefit from the acquisition of new companies.

Q. Are any of the Company's employees currently involved in M&A activity?

A. Yes, as described by the Company in response to a Staff data request, the Company states that its employees are currently engaged in NW Natural Water

acquisitions.[25] As Hold Co. continues to expand its reach in the water industry, and continues to utilize NW Natural employees and executives to do so, it is imperative that Hold Co.'s regulated entity, NW Natural and its ratepayers are not left subsidizing these endeavors.

It is of course not up to Staff to determine how Hold Co. decides to expand its business operations, but it is Staff's position that the costs of any such NW Natural employee time spent on merger and acquisition activity be the responsibility of shareholders rather than ratepayers. Staff also notes that it is important to remember that information about acquisitions only becomes public if the acquisition is at least reasonably successful. A company is rather unlikely to make public news of non-completed mergers and acquisitions, so it is reasonable to assume that the known acquisitions of NW Natural Water represent just a fraction of the acquisitions explored by Hold Co., and therefore represent only a fraction of the time spent on such acquisitions by NW Natural employees to the benefit of Hold Co. and its shareholders.

Q. What is Staff's recommendation?

A. Staff recommends the Company add clarifying language to its MSA and Allocation Manual, to state that all executive time spent on non-utility work is to be tracked and charged accordingly, in 15 minute increments.[26] That is to say, Staff recommends that the time tracking requirement not be based on FTE

[25] Exhibit Staff/702, Soldavini/8, NWN Response to Staff Data Request 343.
[26] Though seemingly insignificant, note that 30 minutes of an 8-hour workday is 6.25 percent of an 8-hour workday. Changing to 15 minute increments means that anything more than 3.125 percent of on 8-hour workday would need to be charged to non-utility.

status, or an 8-hour workday, as there is no expectation an exempt employee will work 8 hours per day or 40 hours per week. Any executive time spent on non-utility projects, such as those for Hold Co. or NW Natural Water activity should be tracked and charged accordingly to ensure Oregon ratepayers are not subsidizing unregulated affiliates business endeavors.

Q. Does this conclude your opening testimony?

A. Yes.

CASE: UG 388
WITNESS: SABRINNA SOLDAVINI

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 701

Witness Qualifications Statement

April 17, 2020

WITNESS QUALIFICATION STATEMENT

NAME: Sabrinna Soldavini

EMPLOYER: Public Utility Commission of Oregon

TITLE: Senior Regulatory Analyst
Energy Rates, Finance and Audit Division

ADDRESS: 201 High St. SE Ste.
100 Salem, OR
97301-3612

EDUCATION: Masters of Science, Agricultural Economics
Purdue University, West Lafayette, Indiana

Bachelor of Science, Economics
University of Oregon, Eugene, Oregon

EXPERIENCE: I have been employed by the Oregon Public Utility Commission (Commission) since August 2018 in the Energy, Rates and Finance Division. My responsibilities include providing research, analysis, and recommendations on a range of regulatory issues for filings made by utilities.

Prior to working for the Commission I was a consulting analyst for MGT Consulting, primarily to help large public school districts prepare for bond proposals through budget analysis and statistical modelling/projections of student and demographic data. Prior to this work, I was a Research Assistant at Purdue University where I conducted research on the economic feasibility of biofuel feedstocks. Additionally, I have experience working in Data Analysis, and Program Coordination within the technology sector.

CASE: UG 388
WITNESS: SABRINNA SOLDAVINI

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 702

Exhibits in Support
Of Opening Testimony

April 17, 2020

NW Natural®

Rates & Regulatory Affairs
2020 Oregon General Rate Case
UG 388
Data Request Response

Request No.: UG 388 SDR 112
Please provide, in electronic spreadsheet format, a copy of the Company's class cost-of-service model.

Response:

Please refer to the attachment, “UG 388 SDR 112 Attachment 1,” for the Company’s Long-Run Incremental Cost (LRIC) study model.

NW Natural
Oregon Jurisdictional Rate Case
Test Year Twelve Months Ended October 31, 2021
Long-Run Incremental Cost Study
Incremental Capital Investment Cost Summary

UG 388 SDR 112 Attachment 1

Line No.			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	CUSTOMER CLASS		Residential	Commercial	Industrial	Commercial	Commercial	Commercial	Industrial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Transportation	Transportation
	SERVICE TYPE		Sales Firm	Sales Firm	Sales Firm	Sales Firm	Sales Firm	Transportation Firm	Sales Firm	Transportation Firm	Sales Firm	Sales Firm	Transportation Firm	Transportation Firm	Sales Interruptible	Sales Interruptible	Interruptible	
	RATE SCHEDULE		02	03CSF	03ISF	27R	31CSF	31CTF	31ISF	31ITF	32CSF	32ISF	32CTF	32ITF	32CSI	32ISI	32CTI / 32ITI	33T
	SERVICE INSTALLATIONS	34.8 yr life																
1	TYPICAL SERVICE PIPE SIZE		1/2" - 1"	1" - 2"	1" - 2"	1/2" - 1"	1" - 2"	2" - 4"	2" - 4"	2" - 4"	1" - 2"	1" - 2"	2" - 4"	2" - 4"	2" - 4"	2" - 4"	2" - 4"	2" - 4"
2	AVERAGE SERVICE COST		$ 2,293.36	$ 4,151.30	$ 9,598.37	$ 954.52	$ 7,865.72	$ 9,220.24	$ 8,985.76	$ 8,363.96	$ 8,813.69	$ 9,769.91	$ 9,200.82	$ 14,072.20	$ 6,350.05	$ 11,618.69	$ 18,201.46	$ 17,286.70
3	INVESTMENT CARRYING CHARGE		13.23%	13.23%	13.23%	13.23%	13.23%	13.23%	13.23%	13.23%	13.23%	13.23%	13.23%	13.23%	13.23%	13.23%	13.23%	13.23%
4	ANNUAL REVENUE REQUIREMENT		$ 303.41	$ 549.22	$ 1,269.86	$ 126.28	$ 1,040.63	$ 1,219.84	$ 1,188.82	$ 1,106.55	$ 1,166.05	$ 1,292.56	$ 1,217.27	$ 1,861.75	$ 840.11	$ 1,537.15	$ 2,408.05	$ 2,287.03
	METERS & REGULATORS	20.7 yr life																
5	METERS & REGULATORS		$ 292.33	$ 662.11	$ 3,276.91	$ 288.15	$ 4,276.70	$ 4,028.92	$ 5,543.06	$ 4,652.53	$ 6,604.18	$ 8,866.94	$ 6,856.95	$ 6,856.95	$ 9,045.99	$ 8,457.88	$ 9,205.58	$ 26,700.31
6	INVESTMENT CARRYING CHARGE		15.12%	15.12%	15.12%	15.12%	15.12%	15.12%	15.12%	15.12%	15.12%	15.12%	15.12%	15.12%	15.12%	15.12%	15.12%	15.12%
7	ANNUAL REVENUE REQUIREMENT		$ 44.20	$ 100.11	$ 495.47	$ 43.57	$ 646.64	$ 609.17	$ 838.11	$ 703.46	$ 998.55	$ 1,340.68	$ 1,036.77	$ 1,036.77	$ 1,367.75	$ 1,278.83	$ 1,391.88	$ 4,037.09
	MAIN INVESTMENT	41.1 yr life																
8	AVERAGE MAIN EXTENSION PER CUSTOMER		49.1	380.4	380.4	88.0	452.6	452.6	524.7	524.7	452.6	524.7	452.6	524.7	452.6	524.7	524.7	524.7
9	TYPICAL PIPE SIZE REQUIRED		2 "	2 "	2 "	2" - 4"	2" - 4"	2" - 4"	2" - 4"	2" - 4"	2" - 4"	2" - 4"	2" - 4"	2" - 4"	2" - 4"	2" - 4"	2" - 4"	2" - 4"
10	AVERAGE COST PER FOOT (5 yr Avg.)		$ 43.54	$ 33.34	$ 35.47	$ 10.14	$ 50.23	$ 33.12	$ 52.08	$ 52.08	$ 51.56	$ 36.67	$ 37.38	$ 112.07	$ 37.38	$ 91.19	$ 157.80	$ 91.19
11	MAIN EXTENSION INVESTMENT		$ 2,139.25	$ 12,681.69	$ 13,494.50	$ 891.68	$ 22,731.91	$ 14,989.22	$ 27,327.95	$ 27,327.95	$ 23,335.37	$ 19,241.10	$ 16,916.82	$ 58,806.30	$ 16,916.82	$ 47,848.52	$ 82,798.71	$ 47,848.52
12	INVESTMENT CARRYING CHARGE		12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%
13	ANNUAL REVENUE REQUIREMENT		$ 274.04	$ 1,624.52	$ 1,728.64	$ 114.22	$ 2,911.96	$ 1,920.12	$ 3,500.71	$ 3,500.71	$ 2,989.26	$ 2,464.78	$ 2,167.04	$ 7,533.09	$ 2,167.04	$ 6,129.40	$ 10,606.52	$ 6,129.40
14	ESTIMATED DESIGN DAY LOAD FACTOR	27.8%	20.9%	22.7%	21.4%	18.4%	24.4%	36.8%	35.9%	44.1%	27.4%	53.4%	41.0%	51.8%	44.8%	42.2%	59.7%	51.8%
15	INCR CAPACITY & COMMODITY MAIN INVESTMENT PER THERM		$ 0.02283	$ 0.02099	$ 0.02223	$ 0.02588	$ 0.01952	$ 0.01296	$ 0.01326	$ 0.01081	$ 0.01736	$ 0.00893	$ 0.01163	$ 0.00919	$ -	$ -	$ -	$ -
16	AVERAGE THERMS PER CUSTOMER		638	2,898	14,524	551	33,787	53,524	62,610	103,741	85,459	241,699	238,662	839,964	415,414	447,389	2,319,202	-
17	CAPACITY MAIN INVESTMENT		$ 14.56	$ 60.82	$ 322.80	$ 14.26	$ 659.61	$ 693.74	$ 830.02	$ 1,121.28	$ 1,483.77	$ 2,157.18	$ 2,776.22	$ 7,722.33				$ -
18	INVESTMENT CARRYING CHARGE		12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%	12.81%				12.81%
19	ANNUAL REVENUE REQUIREMENT		$ 1.87	$ 7.79	$ 41.35	$ 1.83	$ 84.50	$ 88.87	$ 106.33	$ 143.64	$ 190.07	$ 276.33	$ 355.63	$ 989.23	$ -	$ -	$ -	$ -
	STORAGE INVESTMENT	57.8 yr life																
20	STORAGE INVESTMENT PER SALES THERM	01636	$ 0.07838	$ 0.07206	$ 0.07631	$ 0.08886	$ 0.06703	$ -	$ 0.04552	$ -	$ 0.05961	$ 0.03064	$ -	$ -	$ 0.03651	$ 0.03876	$ -	$ -
21	AVERAGE THERMS PER CUSTOMER		638	2,898	14,524	551	33,787	53,524	62,610	103,741	85,459	241,699	238,662	839,964	415,414	447,389	2,319,202	-
22	UNDERGROUND STORAGE INVESTMENT		$ 50.01	$ 208.83	$ 1,108.33	$ 48.96	$ 2,264.74		$ 2,850.01		$ 5,094.21	$ 7,405.66			$ 15,166.77	$ 17,340.80		
23	INVESTMENT CARRYING CHARGE		12.13%	12.13%	12.13%	12.13%	12.13%		12.13%		12.13%	12.13%			12.13%	12.13%		
24	ANNUAL REVENUE REQUIREMENT		$ 6.07	$ 25.33	$ 134.44	$ 5.94	$ 274.71	$ -	$ 345.71	$ -	$ 617.93	$ 898.31	$ -	$ -	$ 1,839.73	$ 2,103.44	$ -	$ -
25	**TOTAL INCREMENTAL INVESTMENT COST PER CUSTOMER**		**$ 630**	**$ 2,307**	**$ 3,670**	**$ 292**	**$ 4,958**	**$ 3,838**	**$ 5,980**	**$ 5,454**	**$ 5,962**	**$ 6,273**	**$ 4,777**	**$ 11,421**	**$ 6,215**	**$ 11,049**	**$ 14,406**	**$ 12,454**

NW Natural®

Rates & Regulatory Affairs
UG 388
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Data Request Response

Request No.: UG 388 OPUC DR 307

307. Please refer to the Company's response to Staff Data Request 224. Please explain in narrative form, specifically, how executive time is tracked for time spent on non-utility or affiliate projects.

Response:

Executive time is tracked for time spent on non-utility and affiliate projects consistent with NWN's Cost Allocation Manual that the Company filed in Docket UM 1804 and UI 385 on December 28, 2018. The executives direct-charge time incurred in aggregate of 30 minutes per day directly to the respective affiliate or non-utility activity to which the time relates in the SAP time reporting system. The Corporate Secretary is the only exception, as that department has been identified as an indirect labor department; the salary and related costs of that executive position are allocated as part of the Massachusetts method calculation and allocation of the indirect common costs.

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Rates & Regulatory Affairs
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Data Request Response

Request No.: UG 388 OPUC DR 340

340. Were any Northwest Natural employees (either executive or non-executive), involved in any merger and acquisition (M&A) related activity in 2019? For example, did any of the Company's employees work on any NW Natural Water acquisitions in 2019?

a. If yes, please provide, by merger or acquisition project, their:
   i. Title;
   ii. Assigned M&A related duties; and
   iii. Regular duties.

Response:

Yes, Northwest Natural employees were involved in water related merger and acquisition (M&A) activity in 2019. Please refer to OPUC 388 DR 342 – Attachment 1, which identifies such employees and their titles, which generally describes their regular duties. The time tracking and shared services does not track at the detailed level of assigned M&A duties or by project.

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Rates & Regulatory Affairs
UG 388
2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 341

341. In reference to the above question, if any of the Company's employees worked on any NW Natural Water acquisition in 2019, in any capacity, please describe how both time and costs incurred by employees were tracked and charged to such activity.

Response:

All merger and acquisition (M&A) related work is tracked and charged as part of our shared services process as outlined in the Company's Cost Allocation Manual and Master Services Agreement. Since the inception of Northwest Natural Holding Company (NW Natural Holdings) in 2018, all M&A related time is charged out of the Utility to NW Natural Holdings or NW Natural Water Company, LLC (NW Natural Water) for any M&A related activities. The Company does not have a different tracking mechanism for M&A related activities than all other shared services. The cost of the time is charged out fully loaded with payroll overheads, and the Company's administrative overhead is also applied covering all payroll related and indirect costs incurred by employees.

Any costs incurred outside of employee time are direct charged to NW Natural Holdings or NW Natural Water depending on the M&A related activity. For example, airfare for a M&A related activity would be direct charged to NW Natural Water. Additionally, Accounting monitors for any inadvertent charges that are then intercompany transferred to the entity that should have been direct charged. If any of these existed related to M&A work, they would be transferred to NW Natural Water in the intercompany process.

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Rates & Regulatory Affairs
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2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 342

342. For the year 2019 please provide, by employee, a listing of all time allocated to M&A related activity, the time allocated to M&A related activity expressed as a percentage of each employees FTE and, if available all hours worked by employees, and transactions charged.

a. For each invoiced transaction please include:
   i. Company name;
   ii. Invoice number;
   iii. Transaction number;
   iv. Amount paid;
   v. Invoice description;
   vi. GL accounts debited and credited;
   vii. GL account name;
   viii. Invoice date;
   ix. Payment date;
   x. Transaction date;

b. For each allocated or direct charged transaction include:
   i. Rationale for the allocation;
   ii. Calculation for any estimates or allocation factors utilized;
   iii. Date of the transactions;
   iv. All GL accounts debited and credited;
   v. GL accounts names; and
   vi. Description of the transaction.

Response:

Please refer to '**Confidential UG 388 OPUC DR 342 Attachment 1'** for a listing by employee of all time charged to M&A related activities in 2019. The listing also includes title, company name and approximation percentage of each employee's FTE. For the purposes of our internal tracking, we define the M&A work to be up through Day 1 of operations of an acquisition, including setup of payroll and systems before Day 1 of operations.

a) As explained in the Company's response to UG 388 OPUC DR 341, employee time allocated to M&A related activity occurs through our shared services process and is processed monthly to pay for all shared services that month and any other intercompany transactions (i.e., one total intercompany payment each

month); therefore, the transactions are not invoiced. Shared services charges related to M&A time are always recorded to intercompany receivable (DR Intercompany Receivable Water or Holdings, CR Shared Services) and settled as part of the monthly intercompany processing and settlement process which occurs around the 25th of the month – and the intercompany charges are always paid in full. Please refer to the Company's response to UG 388 OPUC DR 121 for all intercompany payments, which include the monthly transactions for the above referenced shared services.

b) **'Confidential UG 388 OPUC DR 342 Attachment 1'** includes all time direct-charged related to M&A work. The only allocations are the indirect common cost allocations as part of the Company's Cost Allocation Manual and are included in the Company's response to UG 388 OPUC DR 226 – but are not differentiated between M&A work and non-M&A work. There are no other allocations related to M&A work. We do monitor for any inadvertent charges that are then intercompany transferred to the entity that should have been direct charged. If any of these existed related to M&A work, they would be included in the above referenced response to UG 388 OPUC DR 121.

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Rates & Regulatory Affairs
UG 388
2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 343

343. Are any of the Company's employees currently involved in merger or acquisition related activity? If yes, please explain how these employees are tracking time related to any such activity.

Response:

Yes, the Company has employees currently involved in merger and acquisition related activity. All time is tracked and direct charged out of the Utility as explained in further detail in the Company's responses to UG 388 OPUC DRs 340, 341 and 342.

CASE: UG 388
WITNESS: SABRINNA SOLDAVINI

PUBLIC UTILITY COMMISSION
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STAFF EXHIBIT 703

Exhibits in Support
Of Opening Testimony

April 17, 2020

Staff Exhibit 703 is confidential

CASE: UG 388
WITNESS: SABRINNA SOLDAVINI

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 704

Exhibits in Support
Of Opening Testimony

April 17, 2020

Guidelines for Cost Allocations and Affiliate Transactions:

The following Guidelines for Cost Allocations and Affiliate Transactions (Guidelines) are intended to provide guidance to jurisdictional regulatory authorities and regulated utilities and their affiliates in the development of procedures and recording of transactions for services and products between a regulated entity and affiliates. The prevailing premise of these Guidelines is that allocation methods should not result in subsidization of non-regulated services or products by regulated entities unless authorized by the jurisdictional regulatory authority. These Guidelines are not intended to be rules or regulations prescribing how cost allocations and affiliate transactions are to be handled. They are intended to provide a framework for regulated entities and regulatory authorities in the development of their own policies and procedures for cost allocations and affiliated transactions. Variation in regulatory environment may justify different cost allocation methods than those embodied in the Guidelines.

The Guidelines acknowledge and reference the use of several different practices and methods. It is intended that there be latitude in the application of these guidelines, subject to regulatory oversight. The implementation and compliance with these cost allocations and affiliate transaction guidelines, by regulated utilities under the authority of jurisdictional regulatory commissions, is subject to Federal and state law. Each state or Federal regulatory commission may have unique situations and circumstances that govern affiliate transactions, cost allocations, and/or service or product pricing standards. For example, The Public Utility Holding Company Act of 1935 requires registered holding company systems to price "at cost" the sale of goods and services and the undertaking of construction contracts between affiliate companies.

The Guidelines were developed by the NARUC Staff Subcommittee on Accounts in compliance with the Resolution passed on March 3, 1998 entitled "Resolution Regarding Cost Allocation for the Energy Industry" which directed the Staff Subcommittee on Accounts together with the Staff Subcommittees on Strategic Issues and Gas to prepare for NARUC's consideration, "Guidelines for Energy Cost Allocations." In addition, input was requested from other industry parties. Various levels of input were obtained in the development of the Guidelines from the Edison Electric Institute, American Gas Association, Securities and Exchange Commission, the Federal Energy Regulatory Commission, Rural Utilities Service and the National Rural Electric Cooperatives Association as well as staff of various state public utility commissions.

In some instances, non-structural safeguards as contained in these guidelines may not be sufficient to prevent market power problems in strategic markets such as the generation market. Problems arise when a firm has the ability to raise prices above market for a sustained period and/or impede output of a product or service. Such concerns have led some states to develop codes of conduct to govern relationships between the regulated utility and its non-regulated affiliates. Consideration should be given to any "unique" advantages an incumbent utility would have over competitors in an emerging market such as the retail energy market. A code of conduct should be used in conjunction with guidelines on cost allocations and affiliate transactions.

A. DEFINITIONS

1. Affiliates - companies that are related to each other due to common ownership or control.

2. Attestation Engagement - one in which a certified public accountant who is in the practice of public accounting is contracted to issue a written communication that expresses a conclusion about the reliability of a written assertion that is the responsibility of another party.

3. Cost Allocation Manual (CAM) - an indexed compilation and documentation of a company's cost allocation policies and related procedures.

4. Cost Allocations - the methods or ratios used to apportion costs. A cost allocator can be based on the origin of costs, as in the case of cost drivers; cost-causative linkage of an indirect nature; or one or more overall factors (also known as general allocators).

5. Common Costs - costs associated with services or products that are of joint benefit between regulated and non-regulated business units.

6. Cost Driver - a measurable event or quantity which influences the level of costs incurred and which can be directly traced to the origin of the costs themselves.

7. Direct Costs - costs which can be specifically identified with a particular service or product.

8. Fully Allocated costs - the sum of the direct costs plus an appropriate share of indirect costs.

9. Incremental pricing - pricing services or products on a basis of only the additional costs added by their operations while one or more pre-existing services or products support the fixed costs.

10. Indirect Costs - costs that cannot be identified with a particular service or product. This includes but not limited to overhead costs, administrative and general, and taxes.

11. Non-regulated - that which is not subject to regulation by regulatory authorities.

12. Prevailing Market Pricing - a generally accepted market value that can be substantiated by clearly comparable transactions, auction or appraisal.

13. Regulated - that which is subject to regulation by regulatory authorities.

14. Subsidization - the recovery of costs from one class of customers or business unit that are attributable to another.

B. COST ALLOCATION PRINCIPLES

The following allocation principles should be used whenever products or services are provided between a regulated utility and its non-regulated affiliate or division.

1. To the maximum extent practicable, in consideration of administrative costs, costs should be collected and classified on a direct basis for each asset, service or product provided.

2. The general method for charging indirect costs should be on a fully allocated cost basis. Under appropriate circumstances, regulatory authorities may consider incremental cost, prevailing market pricing or other methods for allocating costs and pricing transactions among affiliates.

3. To the extent possible, all direct and allocated costs between regulated and non-regulated services and products should be traceable on the books of the applicable regulated utility to the applicable Uniform System of Accounts. Documentation should be made available to the appropriate regulatory authority upon request regarding transactions between the regulated utility and its affiliates.

4. The allocation methods should apply to the regulated entity's affiliates in order to prevent

subsidization from, and ensure equitable cost sharing among the regulated entity and its affiliates, and vice versa.

5. All costs should be classified to services or products which, by their very nature, are either regulated, non-regulated, or common to both.

6. The primary cost driver of common costs, or a relevant proxy in the absence of a primary cost driver, should be identified and used to allocate the cost between regulated and non-regulated services or products.

7. The indirect costs of each business unit, including the allocated costs of shared services, should be spread to the services or products to which they relate using relevant cost allocators.

C. COST ALLOCATION MANUAL (NOT TARIFFED)

Each entity that provides both regulated and non-regulated services or products should maintain a cost allocation manual (CAM) or its equivalent and notify the jurisdictional regulatory authorities of the CAM's existence. The determination of what, if any, information should be held confidential should be based on the statutes and rules of the regulatory agency that requires the information. Any entity required to provide notification of a CAM(s) should make arrangements as necessary and appropriate to ensure competitively sensitive information derived therefrom be kept confidential by the regulator. At a minimum, the CAM should contain the following:

1. An organization chart of the holding company, depicting all affiliates, and regulated entities.

2. A description of all assets, services and products provided to and from the regulated entity and each of its affiliates.

3. A description of all assets, services and products provided by the regulated entity to non-affiliates.

4. A description of the cost allocators and methods used by the regulated entity and the cost allocators and methods used by its affiliates related to the regulated services and products provided to the regulated entity.

D. AFFILIATE TRANSACTIONS (NOT TARIFFED)

The affiliate transactions pricing guidelines are based on two assumptions. First, affiliate transactions raise the concern of self-dealing where market forces do not necessarily drive prices. Second, utilities have a natural business incentive to shift costs from non-regulated competitive operations to regulated monopoly operations since recovery is more certain with captive ratepayers. Too much flexibility will lead to subsidization. However, if the affiliate transaction pricing guidelines are too rigid, economic transactions may be discouraged.

The objective of the affiliate transactions' guidelines is to lessen the possibility of subsidization in order to protect monopoly ratepayers and to help establish and preserve competition in the electric generation and the electric and gas supply markets. It provides ample flexibility to accommodate exceptions where the outcome is in the best interest of the utility, its ratepayers and competition. As with any transactions, the burden of proof for any exception from

the general rule rests with the proponent of the exception.

1. Generally, the price for services, products and the use of assets provided by a regulated entity to its non-regulated affiliates should be at the higher of fully allocated costs or prevailing market prices. Under appropriate circumstances, prices could be based on incremental cost, or other pricing mechanisms as determined by the regulator.

2. Generally, the price for services, products and the use of assets provided by a non-regulated affiliate to a regulated affiliate should be at the lower of fully allocated cost or prevailing market prices. Under appropriate circumstances, prices could be based on incremental cost, or other pricing mechanisms as determined by the regulator.

3. Generally, transfer of a capital asset from the utility to its non-regulated affiliate should be at the greater of prevailing market price or net book value, except as otherwise required by law or regulation. Generally, transfer of assets from an affiliate to the utility should be at the lower of prevailing market price or net book value, except as otherwise required by law or regulation. To determine prevailing market value, an appraisal should be required at certain value thresholds as determined by regulators.

4. Entities should maintain all information underlying affiliate transactions with the affiliated utility for a minimum of three years, or as required by law or regulation.

E. AUDIT REQUIREMENTS

1. An audit trail should exist with respect to all transactions between the regulated entity and its affiliates that relate to regulated services and products. The regulator should have complete access to all affiliate records necessary to ensure that cost allocations and affiliate transactions are conducted in accordance with the guidelines. Regulators should have complete access to affiliate records, consistent with state statutes, to ensure that the regulator has access to all relevant information necessary to evaluate whether subsidization exists. The auditors, not the audited utilities, should determine what information is relevant for a particular audit objective. Limitations on access would compromise the audit process and impair audit independence.

2. Each regulated entity's cost allocation documentation should be made available to the company's internal auditors for periodic review of the allocation policy and process and to any jurisdictional regulatory authority when appropriate and upon request.

3. Any jurisdictional regulatory authority may request an independent attestation engagement of the CAM. The cost of any independent attestation engagement associated with the CAM, should be shared between regulated and non-regulated operations consistent with the allocation of similar common costs.

4. Any audit of the CAM should not otherwise limit or restrict the authority of state regulatory authorities to have access to the books and records of and audit the operations of jurisdictional utilities.

5. Any entity required to provide access to its books and records should make arrangements as necessary and appropriate to ensure that competitively sensitive information derived therefrom be kept confidential by the regulator.

F. REPORTING REQUIREMENTS

1. The regulated entity should report annually the dollar amount of non-tariffed transactions

associated with the provision of each service or product and the use or sale of each asset for the following:

a. Those provided to each non-regulated affiliate.

b. Those received from each non-regulated affiliate.

c. Those provided to non-affiliated entities.

2. Any additional information needed to assure compliance with these Guidelines, such as cost of service data necessary to evaluate subsidization issues, should be provided.

CASE: UG 388
WITNESS: SABRINNA SOLDAVINI

PUBLIC UTILITY COMMISSION
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STAFF EXHIBIT 705

Exhibits in Support
Of Opening Testimony

April 17, 2020

NORTHWEST NATURAL GAS COMPANY
COST ALLOCATION MANUAL

Overview

The purpose of Northwest Natural Gas Company's ("NWN") Cost Allocation Manual is to describe the methodologies for allocating direct, indirect and shared services costs between NWN, and any affiliates of NWN, and its non-regulated or non-utility affiliates and activities.

NWN is a natural gas local distribution company, which operates in Oregon and Washington, and is regulated by the Public Utility Commission of Oregon ("OPUC") and Washington Utilities and Transportation Commission ("WUTC"). NWN is owned by NWN Holdings. NWN Holdings also owns certain other businesses. NWN, NWN Holdings, and the other businesses owned by NWN and NWN Holdings are "affiliated interests" to NWN under ORS 757.015, and RWC 80.16.10. As such, the allocation of costs between these entities is subject to regulation by the OPUC and WUTC, and this manual sets out the methodologies, policies, and procedures for ensuring that the allocation of costs is done appropriately.

This document is intended to provide an overview of the different types of allocations and the processes employed to direct costs to the proper affiliate or activity.

This Cost Allocation Manual ("CAM") has been completed in accordance and conformance with the NARUC *Guidelines for Cost Allocations and Affiliate Transactions ("NARUC Guidelines")* as follows:

1. To the maximum extent practicable, in consideration of administrative costs, costs should be collected and classified on a direct basis for each asset, service or product provided.
2. The general method for charging indirect costs should be on a fully allocated cost basis. Under appropriate circumstances, regulatory authorities may consider incremental cost, prevailing market pricing or other methods for allocating costs and pricing transactions among affiliates.
3. To the extent possible, all direct and allocated costs between regulated and non-regulated services and products should be traceable on the books of the applicable regulated utility to the applicable Uniform System of Accounts. Documentation should be made available to the appropriate regulatory authority upon request regarding transactions between the regulated utility and its affiliates.
4. The allocation methods should apply to the regulated entity's affiliates in order to prevent subsidization from, and ensure equitable cost sharing among the regulated entity and its affiliates, and vice versa.
5. All costs should be classified to services or products which, by their very nature, are either regulated, non-regulated, or common to both.
6. The primary cost driver of common costs, or a relevant proxy in the absence of a primary cost driver, should be identified and used to allocate the cost between regulated and non-regulated services or products.
7. The indirect costs of each business unit, including the allocated costs of shared services, should be spread to the services or products to which they relate using relevant cost allocators.

Overall, the approach to allocating costs is to directly assign costs when applicable and to allocate costs based on the primary cost driver of the common cost, or relevant proxy, and to ensure that unauthorized subsidization of unregulated activities by regulated activities, and vice versa, does not occur. Except where otherwise approved, goods or services provided to the utility by an affiliate are provided at the lower of cost or prevailing market price. Goods or services provided by the utility to an affiliate are provided at the higher of cost or market price.

Costs allocated can take the form of: direct labor, direct purchased goods or services, and indirect labor and other indirect common costs. These costs are charged by the providing party to the receiving party at fully loaded costs. For the indirect labor and common costs that cannot be direct charged or allocated based on the primary cost driver of the common cost an indirect general allocator of the Massachusetts Formula will be used as a relevant proxy. The general allocator ("Massachusetts Formula") will be developed using an average of plant, revenues, and employee headcount for the preceding year ended December 31st. Refer to "Indirect Costs - Allocation of Common Costs" below.

Affiliates & Non-Regulated Activities

Refer to the subsequent organizational chart for the list of all affiliates and subsidiaries of NWN that currently meet the requirements of ORS 757.015 and RCW 80.16.010, respectively.[1] [2]

The following is a list of NWN's non-regulated activities with additional cost allocation considerations:

1. Appliance Center/Miscellaneous Merchandising
2. Interstate Storage

NW Natural Organizational Chart – as of November 1, 2018



[1] BlackRock, Inc. and The Vanguard Group hold more than five percent of the voting securities of NWN, however they are not allocated any direct, indirect and shared services costs by NWN. The ownership of voting securities held by these entities are reported pursuant to ORS 757.511 and OAR 860-027-0175.
[2] On October 1, 2018, NWN consummated a holding company reorganization, whereby Northwest Natural Holding Company became the sole shareholder of all of the outstanding shares of NWN, and NWN transferred to Northwest Natural Holding Company all outstanding interests of each of its subsidiaries other than Northwest Energy Corporation and its subsidiary, NWN Gas Reserves LLC.

Labor Allocation Methods

Management oversight and other labor performed by NWN employees for the benefit of affiliates or non-public utility activities are recorded in accordance with the labor allocation methods described below.

Direct Labor - Shared Services

NWN has several departments that may provide services to affiliates that specifically benefit another entity. These departments direct-charge time incurred in aggregate of 30 minutes per day directly to the respective affiliate, or non-utility activity in which the time relates to in the SAP time reporting system to the extent possible. The costs are assigned directly to the entity for which the service is being provided through intercompany accounts. NWN charges labor rates for these shared services at cost per the payroll systems, grossed up for payroll overheads. Refer to 'Payroll Loadings and Overheads' below.

The departments that direct charge time incurred include:

- Accounting, including Shared Services Management
- Accounts Payable
- Clerical Administrative Services
- Corporate Communications
- Engineering and Operations
- Environmental
- Executives – Management Oversight
- Facilities and Security
- Gas Accounting
- HR and Payroll
- Information Technology & Services
- Legal
- Marketing
- Public Policy and Government Affairs
- Purchasing and Stores
- Rates and Regulatory
- Risk and Land
- Safety
- Strategic planning, business development
- Tax
- Treasury

Indirect Labor - General and Administrative Services

NWN has several departments that perform administrative and general functions for the benefit of NWN, NW Natural Holdings and its affiliates as well as public company related activities in service of NWN and other affiliates. These departments' labor costs are indirectly charged via a corporate allocation to the affiliates that benefit from their services. See 'Indirect Costs - Allocations of Common Costs' below. The below departments are determined to be indirect labor costs as they cannot be identified with a particular service or product to be charged and the labor benefits all affiliates. As such, the labor costs of these departments are allocated using

allocation factors designed to equitably allocate costs between NWN and its affiliates. These allocation factors are designed with an emphasis on recognizing cost drivers, or a relevant proxy in the absence of a primary cost driver.

These departments include:

- Corporate Governance and Compliance
- Corporate Secretary
- Financial Planning & Budgeting
- Financial Reporting
- Internal Audit
- Investor Relations
- Shareholder Services

Payroll Loadings and Overheads

NWN Employee payroll overhead (POH) is comprised of Vacation and Holiday Overhead Load and Benefits Overhead Load. The Company's payroll overheads loading rate is reviewed and updated annually by HR, Accounting, and Finance. Quarterly, any over or under allocation of costs recorded to the payroll overhead clearing accounts is reviewed and allocated to corporate expense and non-utility activities consistent with the underlying payroll charged.

Vacation and Holiday Overhead Load

A vacation and holiday overhead load is included in the payroll overheads which includes the estimated cost of all vacation, sick and company designated holiday days earned by an employee so that these costs appropriately follow where an employee charges their time.

Benefits Overhead Load

The benefit overhead load includes the cost of health care, pension, post-retirement medical, workers' compensation, 401K plans, payroll taxes, and annual incentive plan and key goal bonuses. If exception time is reported (see "Labor Allocation Methods"), the benefits overhead load follows the payroll dollars. The benefits overhead load is set at a rate adequate to fully allocate by year-end all actual benefit costs. The rate is determined at the beginning of the year based on estimated costs. Because benefit cost rates may differ depending on employee grade, employees are categorized into two classes, with different benefits overhead load rates for each class. The employee classes are: (1) Executives, and (2) Non-executives.

In 2017, the following costs were allocated as payroll overhead loadings (company averages):

Executives	
Vacation & Holiday Overhead Load	15.57% of payroll
Benefits Overhead Load	91.09% of payroll
Total Executive Payroll Overhead[3]	106.66% of payroll
Non-Executives	
Vacation & Holiday Overhead Load	15.57% of payroll
Benefits Overhead Load	79.89% of payroll
Total Non-Executives Payroll Overhead	95.46% of payroll
Overtime and Doubletime Overhead[4]	15.80% of payroll

Service Provider and Administrative Allocations

For affiliate labor charges, both direct and indirect charged, an additional administrative overhead load of 27.5% of the labor cost is added to cover the cost of rented space, office supplies, IT costs, utilities, furniture and equipment and other administrative costs. [5] In like manner, an appropriate administrative overhead load is also charged from an affiliate to NWN when an affiliate provides services to NWN. The Company's administrative overhead is reviewed annually by Accounting.

Other Goods or Services

Direct Costs

Affiliates or non-regulated utility activities are charged directly for materials, supplies and services (e.g., consulting services, accounting software, office supplies, Kelso-Beaver Pipeline demand charge[6]) purchased by NWN on behalf of the affiliate on the basis of the full cost of the items supplied.

Indirect Costs - Allocation of Common Costs Incurred

Common costs incurred by NWN that may benefit other affiliates that are not able to be directly assigned will be allocated to the affiliates using the general corporate allocation methodology.

[3] The executive payroll overhead rates do not include expenses for various elements of our executive compensation program such as stock option expense, restricted stock unit expense or long-term incentive plan expenses, because these expenses are excluded from rate base and are therefore, not necessary to allocate out.

[4] The overtime overhead rates do not include a vacation and holiday component, and only include those benefit costs that are incurred when additional salary is incurred including payroll taxes and 401k match.

[5] The administrative overhead load will not be charged if the employee providing the Services is located on affiliate premises for which all facilities related costs are borne by the Affiliate receiving the Services.

[6] Under the Gas Transportation Agreement be between Kelso-Beaver Pipeline Company ("KBPC") and NWN dated September 26, 1991, NWN pays KBPC a monthly demand charge which is charged directly. Additionally, if KBPC actually transports gas for NWN, there is an additional volumetric/commodity charge payable by NWN to KBPC for gas transported. The rates charged by KBPC to NWN for gas transportation services on the Kelso-Beaver Pipeline were approved by FERC in KBPC's 1991 certificate order.

These common costs include the indirect labor of the General and Administrative departments listed above as well as indirect department costs. See summary below.

Additionally, commons costs incurred by NWN Holdings that benefit NWN and other affiliates will be allocated using the general corporate allocation methodology and NWN will be charged its portion intercompany. NWN Holdings' structure as a publicly traded holding company provides substantial benefits to its regulated utilities and other affiliates. Indeed, the NWN Holdings' without any operations of its own, exists for the purpose of, and in service to, its subsidiaries. For these costs that benefit various functional areas and affiliates, it is not practical to charge the costs directly. Costs incurred by NWN Holdings directly related to the publicly traded company structure will be allocated to the affiliates using the general corporate allocator.

The following table shows the formulas that shall be used to allocate the cost of services and costs incurred which are not directly charged. These allocators shall be updated annually based on the preceding year ended December 31st data. However, if a significant or material event occurs during the year the Company will update the allocators to reflect such an event on a pro-rata basis. The following table includes functions and costs that do not have a direct cost causation. The general corporate allocator ("Massachusetts Formula") will be developed using an average of plant, operating revenues, and payroll expense for the preceding year ended December 31st.

NWN Indirect Costs Incurred[7]	Basis of Allocation
Corporate Governance and Compliance Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Corporate Secretary Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Financial Planning and Budgeting Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Financial Reporting Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Internal Audit Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Investor Relations Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense

[7] The departments include the departmental payroll and non-payroll costs incurred and additional administrative overhead charge on payroll costs.

Shareholder Services Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Insurance Premiums	Allocation to affiliates and non-regulated activities covered by the group insurance based on the underwriting principles for each type of policy.
Property Taxes	Allocation to affiliates and non-regulated activities based on the value of the property owned that the taxes relate to.

NW Natural Holdings Common Costs Incurred	**Basis of Allocation**
Costs related to publicly traded company structure	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Income tax Expense or Benefit	Allocated based on the adjusted pre-tax income or loss of the affiliate or activity

Other Goods and Services related to Individual NWN Non-Regulated Activities

Appliance Center

NWN's Appliance Center is a retail store that demonstrates and sells natural gas appliances to the general public. In addition to the allocations described within, an additional charge for management oversight of 1.5% of NWN's selling expenses is charged to the Appliance Center business. Certain NWN employees work exclusively on matters related to the operation of the Appliance Center. The cost of the employees and all related payroll overheads are charged to directly to the appliance center. In addition, all expenses incurred in the operation of the Appliance Center are charged to directly.

Interstate Storage

NWN owns and operates the Mist underground natural gas storage facility in Columbia County near Mist, Oregon. In addition to the allocations described within NWN provides the interstate storage service under a limited jurisdiction blanket certificate issued to it by FERC under Section 284.224 of FERC's regulations. *See*, Northwest Natural Gas Company, 95 FERC ¶ 61,242 (2001). Under that certificate, NWN is authorized to provide FERC-jurisdictional bundled firm and interruptible storage and related transportation services to and from its Mist storage field in interstate commerce. In addition, NWN provides an intrastate firm storage service for eligible intrastate customers and sites in Oregon under Tariff Schedule 80 (experimental). The terms of Rate Schedule 80 mirror NWN's FERC-authorized interstate service. Since the provision of the storage services is accomplished by the use of some shared storage and transportation assets that are included in the core rate base, NWN has sharing agreements in place with its Oregon and Washington regulators. In Oregon, the sharing arrangement for both storage services and asset optimization assistance is set forth in NWN's Tariff Schedules 185 and 186. These sharing agreements are in lieu of specific allocations of costs.

MASTER SERVICES AGREEMENT

THIS MASTER SERVICES AGREEMENT (the "Agreement"), effective January 1, 2019, is between Northwest Natural Gas Company ("NW Natural"), its parent company, Northwest Natural Holding Company ("NW Natural Holdings"), and its affiliates and subsidiaries (together, the "Affiliates"). NW Natural and its Affiliates are "Affiliated Interests," as defined under ORS 757.015 and RCW 80.16.010.

RECITALS

A. NW Natural is an Oregon corporation that is a natural gas local distribution company that serves customers through separate facilities located in Oregon and southwestern Washington. NW Natural is a wholly owned subsidiary of NW Natural Holdings—a publicly held company traded on the New York Stock Exchange. A list of NW Natural's Affiliates is included in Addendum 1, which may be amended periodically. NW Natural and its Affiliates, as identified in Addendum 1, are referred to herein as "Party" or collectively as "Parties". NW Natural is subject to regulation by the Oregon Public Utility Commission ("OPUC") and Washington Utilities and Transportation Commission ("WUTC"), respectively, for its state-regulated gas distribution activities in such states, and by the OPUC and the Federal Energy Regulatory Commission ("FERC") for its regulated intrastate and interstate gas storage activities. NW Natural is headquartered in Portland, Oregon.

B. Attached as Addendum 1 is a list of NW Natural's Affiliates. Except as otherwise noted on the Addendum, all of these Affiliates are legal entities separate and apart from NW Natural. Nothing in the Agreement is to be interpreted to the contrary.

C. NW Natural employs certain trained personnel capable of performing needed management, analytical, professional, and administrative services (which, together with the more detailed services specified on Addendum 2, are referred to herein as the "Services") in furtherance of the Affiliated Interests' operations.

D. NW Natural desires to make available to NW Natural's Affiliates such personnel and Services as the board of directors, officers or managers of those Parties shall reasonably request in the future, without detriment to NW Natural's utility functions.

E. NW Natural's Affiliates desire to make available to NW Natural such personnel and Services as the board of directors, officers or managers of NW Natural shall reasonably request in the future, without detriment to NW Natural's Affiliates' respective business functions.

THEREFORE, the Parties agree as follows:

1. **Services Provided by NW Natural**

Upon the request of the board of directors, officers, or managers of NW Natural, NW Natural shall furnish to its Affiliates the Services listed in Addendum 2 as requested, subject to applicable requirements of the cognizant utility commission(s), and given the terms and conditions as follows:

2. **Requests for Service**

All Services provided shall be mutually agreeable and based upon a written request for Services in a form substantially similar to that attached as Addendum 3 hereto ("Request for Services"), specifying the scope of Services. Changes in the Request for Services shall be agreed to in writing by the Parties.

3. **Basis of Charges**

3.1 Costs Included in State Utility Revenue Requirements. If the service cost or benefit is intended for inclusion in NW Natural's state operations revenue requirements, then:

a. All billing by NW Natural to an Affiliate shall be at the higher of cost or market, unless otherwise specified by the Parties and approved by the OPUC and/or, as appropriate, the WUTC.

b. All billings by an Affiliate to NW Natural shall be at the lower of cost or market, unless otherwise specified by the Parties and approved by the OPUC and/or the WUTC, or unless provided at an approved rate on file with the OPUC and/or the WUTC or the FERC.

c. All billings for Services rendered to NW Natural by an Affiliate shall meet the following three criteria: (1) they must be just and reasonable regulated utility expenses; (2) they must be for functions that NW Natural would perform as a stand-alone utility; and (3) they must not duplicate, but may augment/supplement, functions already performed by NW Natural.

3.2 Costs Defined. For the purpose of this Agreement, "costs" shall include both of the following:

a. All out-of-pocket expenses of the Party providing the Services incurred in connection with the provision of Services rendered, including salaries, labor costs and benefits and other payroll overhead costs; amounts paid for independent technical and professional Services; amounts paid to third-party contractors; and all administrative overhead expenses, including, but not limited to, space utilization, utilities, IT costs and other administrative costs. Labor costs shall be based on the number of hours worked by the employees multiplied by the average cost rate per hour applicable to those employees. The hourly rate shall be adjusted to

include all appropriate payroll overhead loadings (for vacation, benefits, taxes, etc.). In addition, the applicable Administrative overhead loading rate shall be applied to derive the fully loaded cost of employee time associated with Services provided. Materials, supplies, and non-labor vouchered items shall similarly be charged to the other Party on the basis of the full cost of the items supplied. Supporting documentation on the cost of non-labor items shall be available to the other Party to substantiate the charges billed. Non-labor costs shall not have an A&G loading rate applied.

b. A reasonable return on any investment in assets, equipment, or plant ("Assets") supporting the provision of Services in the following amounts:

(i) For Services provided by NW Natural, the return on Assets employed, if any, shall be no less than the rate case authorized rate of return on its investment serving its ratepayers; and

(ii) For Services provided by an Affiliate to NW Natural, the return on Assets employed, if any, shall be no more than the rate case authorized rate of return on its investment serving its ratepayers, if applicable.

4. **Method of Charging for Services**

4.1 Direct Assignment and Allocation Methods. Direct assignment of costs shall be the primary method for charging for Services according to the accounting procedures in NW Natural's Cost Allocation Manual, attached as Exhibit A. Exhibit A contains rules for determining and allocating any remaining costs associated with those Services that cannot be directly assigned to a user of a Service. The allocation methods set forth in Exhibit A shall be applied to allocate those costs that cannot be directly assigned.

4.2 Review of Affiliate Charges to NW Natural. At least annually, NW Natural shall review the Services supplied by the Affiliates under each of the Addenda executed. The

review shall include a determination that billing is consistent with the accounting and cost assignment procedures in Section 3 and Exhibit A.

5. **Invoicing**

a. As soon as practicable after the last day of each month, the provider of Services shall invoice the recipient of Services for expenses for the month concluded, computed pursuant to Sections 3 and 4 above.

b. All invoice charges shall be supported by documentation satisfactory to the recipient. Charges for Services shall be entered into the accounting records in the month following the period in which Services were rendered. However, if the invoice charges are less than $50,000 per Party, then invoice may be delayed until either (1) total charges are more than $50,000 per Party, or (2) quarterly, whichever comes first.

6. **Monitoring and Control**

The Inter-Company Services Coordinator ("Coordinator") is responsible for reviewing, monitoring and maintaining Services Requests that are active. The Coordinator ensures authorization of new Services Requests and that allocation factors are proper and accurate. Additionally, the Coordinator is responsible for coordinating the monthly billing process as described in Section 5 above.

7. **Billing Disputes**

Disputes on billings for Services shall be resolved through negotiations between the authorized representative(s) of the Affiliate, the Controller of NW Natural, and the Vice President(s) of the department at NW Natural responsible for providing or receiving Services, or their respective designee(s).

8. **Books and Records**

a. All transactions made under this Agreement shall be recorded by NW Natural in accordance with the Uniform System of Accounts prescribed by the regulatory authorities having jurisdiction over NW Natural.

b. Each Party shall have the right at all reasonable times to examine the books and records of the other for the purpose of verifying the cost, or the market value determination if applicable, of the Services performed by the other Party.

9. **Limitations on Service**

a. NW Natural shall diligently and competently render all Services reasonably requested by the Affiliates to the extent NW Natural can make available its resources without detriment to its utility functions.

b. The Affiliates shall diligently and competently render all Services reasonably requested by NW Natural to the extent those entities can make available their resources without detriment to their business functions, and to the extent that such Services to NW Natural are specified in the attached Addendum 2 to this Agreement.

c. NW Natural and its Affiliates shall coordinate and administer all Services being rendered under this Agreement in order that such Services shall be furnished as efficiently and economically as possible.

d. Except as provided in subsections 9.a. and b. above, neither NW Natural nor its Affiliates shall have priority over the other in obtaining Services under this Agreement.

10. **Limitation of Authority**

The Parties agree that no Party shall assume nor create any obligation on behalf of any other Party other than as specifically provided for in this Agreement. Each Party reserves to itself

the right to make commitments for loans, financing, mortgages, and other commitments necessary and proper for its corporate purposes.

11. **Inspection and Reporting**

a. All books, records, and other data in possession of the Parties relating to the provision of Services pursuant to this Agreement shall at all times, during normal business hours, be made available to or copies provided to any regulatory agency having jurisdiction when engaged in the performance of its lawful functions, except to the extent that such information is reasonably determined by any Party to be confidential in nature in which case any such information shall be submitted to any such regulatory agency under confidential treatment in accordance with the applicable laws and regulations governing such confidential treatment request.

b. Each Party shall timely furnish to each other Party such information with regard to its operations as shall be reasonably required.

12. **Regulatory Jurisdiction**

The Parties acknowledge that NW Natural is a public utility company subject to regulation and control by various state and federal governmental regulatory agencies. The provisions of this Agreement shall be construed in aid of and not in derogation of the lawful control and regulatory power of any such agency.

13. **Damages**

In no event shall a Party be liable to another Party for any lost or prospective profits or any other special, punitive, exemplary, consequential, incidental or indirect losses or damages (in tort, contract or otherwise) under or in respect of this Agreement or for any failure of performance however caused, whether or not arising from the Party's sole, joint, or concurrent negligence. To the extent any payment required to be made under this Agreement is agreed by the Parties to

constitute liquidated damages, the Parties acknowledge that actual damages in such circumstances are difficult or impossible to determine and that such payment of liquidated damages constitutes a reasonable approximation of such damages, and not a penalty.

14. **Governing Law**

This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of Oregon.

15. **Waiver**

Any of the terms and conditions of this Agreement may be waived at any time and from time to time by the Party entitled to the benefit of such term or condition, but a waiver in one instance shall not be construed as a waiver in any other instance. A failure to enforce any provision of this Agreement shall not operate as a waiver of such provision or of any other provision. A waiver by any Party in favor of another Party shall not bind any regulatory agency with jurisdiction over such matter if the agency determines that such waiver would violate its regulations, orders, or applicable statutes.

16. **Assignment**

This Agreement shall be binding upon the Parties and their representatives and may not be assigned.

17. **Termination**

NW Natural reserves the right at any time upon thirty (30) days notice to its Affiliates to terminate this Agreement in whole or part. NW Natural shall promptly notify the OPUC and/or WUTC, if applicable, of such termination. NW Natural, or any Affiliate, reserves the right at any time upon notice to the other to terminate any or all of NW Natural or any Affiliate's Services Request(s) under this Agreement.

18. **Integrated Agreement**

This Agreement embodies the entire agreement and understanding between the Parties and does not supersede any prior agreement between such Parties, but governs all agreements entered into after the Effective Date. This Agreement may be executed by the Parties in separate counterparts, each of which when executed and delivered shall be an original, but which together shall constitute but one and the same agreement.

19. **Adoption of Agreement by Affiliates**

At such time that a NW Natural Affiliate requests or provides Services from/to any Party to this Agreement, the Affiliate shall sign Addendum 3 which adopts this Agreement.

Date as of December 21, 2018

NORTHWEST NATURAL GAS COMPANY

By: _____

Name: Brody J. Wilson

Title: Vice President, Controller, Treasurer & Chief Accounting Officer

Exhibit A – COST ALLOCATION MANUAL

NORTHWEST NATURAL GAS COMPANY
COST ALLOCATION MANUAL

Overview

The purpose of Northwest Natural Gas Company's ("NWN") Cost Allocation Manual is to describe the methodologies for allocating direct, indirect and shared services costs between NWN, and any affiliates of NWN, and its non-regulated or non-utility affiliates and activities.

NWN is a natural gas local distribution company, which operates in Oregon and Washington, and is regulated by the Public Utility Commission of Oregon ("OPUC") and Washington Utilities and Transportation Commission ("WUTC"). NWN is owned by NWN Holdings. NWN Holdings also owns certain other businesses. NWN, NWN Holdings, and the other businesses owned by NWN and NWN Holdings are "affiliated interests" to NWN under ORS 757.015, and RWC 80.16.10. As such, the allocation of costs between these entities is subject to regulation by the OPUC and WUTC, and this manual sets out the methodologies, policies, and procedures for ensuring that the allocation of costs is done appropriately.

This document is intended to provide an overview of the different types of allocations and the processes employed to direct costs to the proper affiliate or activity.

This Cost Allocation Manual ("CAM") has been completed in accordance and conformance with the NARUC *Guidelines for Cost Allocations and Affiliate Transactions ("NARUC Guidelines")* as follows:

1. To the maximum extent practicable, in consideration of administrative costs, costs should be collected and classified on a direct basis for each asset, service or product provided.
2. The general method for charging indirect costs should be on a fully allocated cost basis. Under appropriate circumstances, regulatory authorities may consider incremental cost, prevailing market pricing or other methods for allocating costs and pricing transactions among affiliates.
3. To the extent possible, all direct and allocated costs between regulated and non-regulated services and products should be traceable on the books of the applicable regulated utility to the applicable Uniform System of Accounts. Documentation should be made available to the appropriate regulatory authority upon request regarding transactions between the regulated utility and its affiliates.
4. The allocation methods should apply to the regulated entity's affiliates in order to prevent subsidization from, and ensure equitable cost sharing among the regulated entity and its affiliates, and vice versa.
5. All costs should be classified to services or products which, by their very nature, are either regulated, non-regulated, or common to both.
6. The primary cost driver of common costs, or a relevant proxy in the absence of a primary cost driver, should be identified and used to allocate the cost between regulated and non-regulated services or products.
7. The indirect costs of each business unit, including the allocated costs of shared services, should be spread to the services or products to which they relate using relevant cost allocators.

Overall, the approach to allocating costs is to directly assign costs when applicable and to allocate costs based on the primary cost driver of the common cost, or relevant proxy, and to ensure that unauthorized subsidization of unregulated activities by regulated activities, and vice versa, does not occur. Except where otherwise approved, goods or services provided to the utility by an affiliate are provided at the lower of cost or prevailing market price. Goods or services provided by the utility to an affiliate are provided at the higher of cost or market price.

Costs allocated can take the form of: direct labor, direct purchased goods or services, and indirect labor and other indirect common costs. These costs are charged by the providing party to the receiving party at fully loaded costs. For the indirect labor and common costs that cannot be direct charged or allocated based on the primary cost driver of the common cost an indirect general allocator of the Massachusetts Formula will be used as a relevant proxy. The general allocator ("Massachusetts Formula") will be developed using an average of plant, revenues, and employee headcount for the preceding year ended December 31st. Refer to "Indirect Costs - Allocation of Common Costs" below.

Affiliates & Non-Regulated Activities

Refer to the subsequent organizational chart for the list of all affiliates and subsidiaries of NWN that currently meet the requirements of ORS 757.015 and RCW 80.16.010, respectively.[1] [2]

The following is a list of NWN's non-regulated activities with additional cost allocation considerations:

1. Appliance Center/Miscellaneous Merchandising
2. Interstate Storage

NW Natural Organizational Chart – as of November 1, 2018



[1] BlackRock, Inc. and The Vanguard Group hold more than five percent of the voting securities of NWN, however they are not allocated any direct, indirect and shared services costs by NWN. The ownership of voting securities held by these entities are reported pursuant to ORS 757.511 and OAR 860-027-0175.

[2] On October 1, 2018, NWN consummated a holding company reorganization, whereby Northwest Natural Holding Company became the sole shareholder of all of the outstanding shares of NWN, and NWN transferred to Northwest Natural Holding Company all outstanding interests of each of its subsidiaries other than Northwest Energy Corporation and its subsidiary, NWN Gas Reserves LLC.

Labor Allocation Methods

Management oversight and other labor performed by NWN employees for the benefit of affiliates or non-public utility activities are recorded in accordance with the labor allocation methods described below.

Direct Labor - Shared Services

NWN has several departments that may provide services to affiliates that specifically benefit another entity. These departments direct-charge time incurred in aggregate of 30 minutes per day directly to the respective affiliate, or non-utility activity in which the time relates to in the SAP time reporting system to the extent possible. The costs are assigned directly to the entity for which the service is being provided through intercompany accounts. NWN charges labor rates for these shared services at cost per the payroll systems, grossed up for payroll overheads. Refer to 'Payroll Loadings and Overheads' below.

The departments that direct charge time incurred include:

- Accounting, including Shared Services Management
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- Corporate Communications
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- Environmental
- Executives – Management Oversight
- Facilities and Security
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allocation factors designed to equitably allocate costs between NWN and its affiliates. These allocation factors are designed with an emphasis on recognizing cost drivers, or a relevant proxy in the absence of a primary cost driver.

These departments include:

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- Corporate Secretary
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- Financial Reporting
- Internal Audit
- Investor Relations
- Shareholder Services

Payroll Loadings and Overheads

NWN Employee payroll overhead (POH) is comprised of Vacation and Holiday Overhead Load and Benefits Overhead Load. The Company's payroll overheads loading rate is reviewed and updated annually by HR, Accounting, and Finance. Quarterly, any over or under allocation of costs recorded to the payroll overhead clearing accounts is reviewed and allocated to corporate expense and non-utility activities consistent with the underlying payroll charged.

Vacation and Holiday Overhead Load

A vacation and holiday overhead load is included in the payroll overheads which includes the estimated cost of all vacation, sick and company designated holiday days earned by an employee so that these costs appropriately follow where an employee charges their time.

Benefits Overhead Load

The benefit overhead load includes the cost of health care, pension, post-retirement medical, workers' compensation, 401K plans, payroll taxes, and annual incentive plan and key goal bonuses. If exception time is reported (see "Labor Allocation Methods"), the benefits overhead load follows the payroll dollars. The benefits overhead load is set at a rate adequate to fully allocate by year-end all actual benefit costs. The rate is determined at the beginning of the year based on estimated costs. Because benefit cost rates may differ depending on employee grade, employees are categorized into two classes, with different benefits overhead load rates for each class. The employee classes are: (1) Executives, and (2) Non-executives.

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Benefits Overhead Load	79.89% of payroll
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Overtime and Doubletime Overhead[4]	15.80% of payroll

Service Provider and Administrative Allocations

For affiliate labor charges, both direct and indirect charged, an additional administrative overhead load of 27.5% of the labor cost is added to cover the cost of rented space, office supplies, IT costs, utilities, furniture and equipment and other administrative costs. [5] In like manner, an appropriate administrative overhead load is also charged from an affiliate to NWN when an affiliate provides services to NWN. The Company's administrative overhead is reviewed annually by Accounting.

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Direct Costs

Affiliates or non-regulated utility activities are charged directly for materials, supplies and services (e.g., consulting services, accounting software, office supplies, Kelso-Beaver Pipeline demand charge[6]) purchased by NWN on behalf of the affiliate on the basis of the full cost of the items supplied.

Indirect Costs - Allocation of Common Costs Incurred

Common costs incurred by NWN that may benefit other affiliates that are not able to be directly assigned will be allocated to the affiliates using the general corporate allocation methodology.

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[3] The executive payroll overhead rates do not include expenses for various elements of our executive compensation program such as stock option expense, restricted stock unit expense or long-term incentive plan expenses, because these expenses are excluded from rate base and are therefore, not necessary to allocate out.

[4] The overtime overhead rates do not include a vacation and holiday component, and only include those benefit costs that are incurred when additional salary is incurred including payroll taxes and 401k match.

[5] The administrative overhead load will not be charged if the employee providing the Services is located on affiliate premises for which all facilities related costs are borne by the Affiliate receiving the Services.

[6] Under the Gas Transportation Agreement be between Kelso-Beaver Pipeline Company ("KBPC") and NWN dated September 26, 1991, NWN pays KBPC a monthly demand charge which is charged directly. Additionally, if KBPC actually transports gas for NWN, there is an additional volumetric/commodity charge payable by NWN to KBPC for gas transported. The rates charged by KBPC to NWN for gas transportation services on the Kelso-Beaver Pipeline were approved by FERC in KBPC's 1991 certificate order.

These common costs include the indirect labor of the General and Administrative departments listed above as well as indirect department costs. See summary below.

Additionally, commons costs incurred by NWN Holdings that benefit NWN and other affiliates will be allocated using the general corporate allocation methodology and NWN will be charged its portion intercompany. NWN Holdings' structure as a publicly traded holding company provides substantial benefits to its regulated utilities and other affiliates. Indeed, the NWN Holdings' without any operations of its own, exists for the purpose of, and in service to, its subsidiaries. For these costs that benefit various functional areas and affiliates, it is not practical to charge the costs directly. Costs incurred by NWN Holdings directly related to the publicly traded company structure will be allocated to the affiliates using the general corporate allocator.

The following table shows the formulas that shall be used to allocate the cost of services and costs incurred which are not directly charged. These allocators shall be updated annually based on the preceding year ended December 31st data. However, if a significant or material event occurs during the year the Company will update the allocators to reflect such an event on a pro-rata basis. The following table includes functions and costs that do not have a direct cost causation. The general corporate allocator ("Massachusetts Formula") will be developed using an average of plant, operating revenues, and payroll expense for the preceding year ended December 31st.

NWN Indirect Costs Incurred[7]	Basis of Allocation
Corporate Governance and Compliance Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Corporate Secretary Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Financial Planning and Budgeting Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Financial Reporting Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Internal Audit Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Investor Relations Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense

[7] The departments include the departmental payroll and non-payroll costs incurred and additional administrative overhead charge on payroll costs.

Shareholder Services Department	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Insurance Premiums	Allocation to affiliates and non-regulated activities covered by the group insurance based on the underwriting principles for each type of policy.
Property Taxes	Allocation to affiliates and non-regulated activities based on the value of the property owned that the taxes relate to.

NW Natural Holdings Common Costs Incurred	**Basis of Allocation**
Costs related to publicly traded company structure	General corporate allocation: 33.3% plant, 33.3% operating revenues, 33.3% payroll expense
Income tax Expense or Benefit	Allocated based on the adjusted pre-tax income or loss of the affiliate or activity

Other Goods and Services related to Individual NWN Non-Regulated Activities

Appliance Center

NWN's Appliance Center is a retail store that demonstrates and sells natural gas appliances to the general public. In addition to the allocations described within, an additional charge for management oversight of 1.5% of NWN's selling expenses is charged to the Appliance Center business. Certain NWN employees work exclusively on matters related to the operation of the Appliance Center. The cost of the employees and all related payroll overheads are charged to directly to the appliance center. In addition, all expenses incurred in the operation of the Appliance Center are charged to directly.

Interstate Storage

NWN owns and operates the Mist underground natural gas storage facility in Columbia County near Mist, Oregon. In addition to the allocations described within NWN provides the interstate storage service under a limited jurisdiction blanket certificate issued to it by FERC under Section 284.224 of FERC's regulations. *See*, Northwest Natural Gas Company, 95 FERC ¶ 61,242 (2001). Under that certificate, NWN is authorized to provide FERC-jurisdictional bundled firm and interruptible storage and related transportation services to and from its Mist storage field in interstate commerce. In addition, NWN provides an intrastate firm storage service for eligible intrastate customers and sites in Oregon under Tariff Schedule 80 (experimental). The terms of Rate Schedule 80 mirror NWN's FERC-authorized interstate service. Since the provision of the storage services is accomplished by the use of some shared storage and transportation assets that are included in the core rate base, NWN has sharing agreements in place with its Oregon and Washington regulators. In Oregon, the sharing arrangement for both storage services and asset optimization assistance is set forth in NWN's Tariff Schedules 185 and 186. These sharing agreements are in lieu of specific allocations of costs.

Addendum 1:
Affiliates of NW Natural

The Appliance Center**
Northwest Energy Corporation
NWN Gas Reserves, LLC
Northwest Biogas, LLC
NNG Financial Corporation
KB Pipeline Company
Gill Ranch Storage, LLC
NW Natural Energy, LLC
NW Natural Gas Storage, LLC
Trail West Holdings, LLC
Trail West Pipeline, LLC
BL Credit Holdings, LLC
NW Natural Water Company, LLC
NW Natural Water of Oregon, LLC
NW Natural Water of Washington, LLC
NW Natural Water of Idaho, LLC
Salmon Valley Water Company
Falls Water Company
Cascadia Water, LLC
Gem State Water Company

*Each of these businesses with the exception of the Appliance Center is a legal entity separate and apart from NW Natural. Nothing in this Agreement is intended to be interpreted to the contrary.

**The Appliance Center is a nonregulated business segment of NW Natural.

Addendum 2:

List of Services

This Addendum provides a description of the Services that **may be** performed by the Parties, which may be modified from time to time. This list is exemplary only, and nothing in this addendum suggests that such services have or shall actually be performed by or for any Party. The specific Services to be provided to a particular Party are set forth in Addendum 3.

All Services provided by the Parties shall be based on a mutually agreeable work scope, specifying the scope of Services, personnel, and budget for Services. Changes in the scope of work shall be agreed to by the Parties involved.

Internal Auditing	Reviews internal controls and procedures to ensure assets are safeguarded and transactions are properly authorized and recorded. Periodically audits accounting and other records and coordinates their examination, where applicable, with that of independent public accountants.
Legal	Provide legal advice and assistance with respect to labor and employment law, litigation, contracts, rates and regulation, environmental matters, and real estate legal issues, as well as, authorizations and compliance with matters under federal and state laws.
Corporate and Strategic Planning and Business Analysis and Development	Facilitates preparation of strategic plans, monitors trends and evaluates business opportunities, including acquisitions and dispositions. Facilitates process improvements by investigating and conducting research into issues relating to production, utilization, testing, manufacture, transmission, storage and distribution of energy. Keeps current on all research developments and programs of significance affecting company and the energy industry. Conducts research and development in promising areas and advises and assists in the solution of technical problems.

Accounting/ Accounts Payable/Finance/Budgeting/Treasury	Provide advice and assistance to Company in finance, treasury and accounting matters, including the development of accounting practices, procedures and controls, the maintenance of the general ledger and related subsidiary financial systems, the preparation and analysis of financial reports, treasury management and credit. Provide services related to managing all administrative activities associated with financing, including management of capital structure; cash, credit and risk management activities; investment and commercial banking relationships; oversight of retirement trust funds and general financing activities. Advise and assist company and Affiliates in studying and planning in connection with infrastructure, budgets, economic forecasts, benchmarking, capital expenditures and special projects. Provide centralized accounts payable processing. Provide shared services management and respective intercompany accounting and settlement processes.
Tax	Advise and assist in the preparation of federal, state and other tax returns, and respective tax accounting entries and generally advise company as to any issues involving taxes.
Risk Management	Advise and assist company in its risk and control framework. Manage the purchase and administration of all property and casualty insurance including the settlement of insured claims and in providing risk prevention advice.
Land and Environmental	Provide right of way services, including encroachments. Establishes policies and procedures for compliance with environmental laws and regulations. Researches emerging environmental issues and monitors compliance with environmental requirements. Provides oversight for environmental remediation services.
Corporate Communications	Prepares and disseminates information to employees, customers, government agencies, communities and the media.
Public Policy and Governmental Affairs	Provide services in support of corporate strategies for managing relationships with federal, state and local governments, agencies

	and legislative bodies. Monitor, review, research, and advocate legislative issues. Formulate and assist with public relations and communications programs and administration of corporate contribution and community affairs programs.
Human Resources/Employee Benefits/Payroll/Safety	Advise and assist company in the formulation and administration of human resources and employee relations' policies and programs relating to personnel administration, training, wage and salary administration and safety programs. Provide central accounting for employee benefits and payroll. Direct and administer all medical and health activities for company. Advise and assist company in the administration of such plans and prepare and maintain records of employee and company accounts under the said plans, together with such statistical data and reports as are pertinent to the plans. Provide centralized payroll system.
Information Technology and Services	Provide the resources for the operation of an information technology function, including the development, implementation, and operation of a centralized data processing facility and the management of a telecommunications network. This function includes the central processing of computerized applications, support of individual applications and the development, implementation and processing of those computerized applications that can be best accomplished on a centralized basis. This function provides centralized help desk.
Facilities Management	Manage headquarters facilities, service centers, and district offices. Administers contracts for real estate leases, security, housekeeping, and maintenance of facilities. Maintain database of real estate contracts, managing lease/rental properties, handling purchases and sales of real property.
Office Services/Clerical Administrative Services	Provide centralized mail, imaging, record management services, and other general administrative support services.
Purchasing and Stores	Procure materials, supplies and services necessary for all operations, with the exception of wholesale gas purchases. Manage materials and supplies inventories. Work closely with

	business unit teams, seeking the best value for company through refined sourcing strategies, contracts and supplier agreements.
Marketing	Provide initial contact service related to new customer additions. Plan, formulate and implement marketing programs, as well as provide associated marketing services to improving customer satisfaction, load retention and shaping, growth of energy sales and deliveries, etc. Assist in carrying out policies and programs for the development of plant location and of industrial, commercial and wholesale markets. Provide customer support for industrial and commercial customers. Assist large customers in meeting business requirements related to gas quality, conservation, etc. Seek to maintain positive working relationships with major customers.
Engineering and Operations	Provide advice and assistance to Company in engineering and operations matters.
Rates and Regulatory	Provide advice and assistance to Company in rates and regulatory matters. Provide centralized rates and regulatory services and regulatory compliance.

Addendum 3:

Sample Services Request Form

Services Requested

The undersigned requests that **[Party Providing Services]** provide Services listed in Addendum 2 to the Master Services Agreement.

The undersigned agrees to the terms and conditions contained in the Master Services Agreement, and further agrees that all requests for Services from **[name of Party]** to NW Natural will be governed by the Master Services Agreement.

Services are requested beginning **[Dates Services Requested].**

[Party Requesting Services]

By: _____

Print Name: _____

Title: _____

Date: _____

CASE: UG 388
WITNESS: STEVE STORM

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 800

Opening Testimony

April 17, 2020

Q. Please state your name, occupation, and business address.

A. My name is Steve Storm. I am a Senior Economist employed in the Energy Rates, Finance, and Audit Division of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE., Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. My witness qualification statement can be found in Exhibit Staff/801.

Q. What is the purpose of your testimony?

A. My testimony discusses NW Natural's (Company) move to new offices at 250 SW Taylor Street (250 Taylor), the Company's seismic risk and risk mitigation, and the Company's pension and post-retirement medical benefits and related issues. I make recommendations regarding 250 Taylor and regarding NW Natural's pension cost.

Q. Did you prepare an exhibit for this docket?

A. Yes. I prepared Exhibit Staff/101, consisting of one page, Exhibit Staff/102.

Q. How is your testimony organized?

A. My testimony is organized as follows:

Issue 1. 250 Taylor 3
Issue 2. Seismic Risk and Risk Mitigation..... 28
Issue 3. Pension, Other post-Retirement Benefits, and Related..... 31

Q. Please summarize Staff's recommendations regarding 250 Taylor and NW Natural's pension costs.

A. Staff recommends the Commission take the following actions:

1. Find NW Natural's decision to relocate its headquarters/operations center from One Pacific Square (OPS) to 250 Taylor to be prudent, based on the assumptions made and analysis performed by the Company, and as described and presented in its testimony and exhibits in this proceeding.
2. Require NW Natural to use the average value of the other five jurisdictional energy utilities for its pension EROA and discount rate, which reduces Test Year pension costs by approximately $3.4 million.

ISSUE 1. 250 TAYLOR

Q. What does Staff mean by "250 Taylor?"

A. Staff uses, as does NW Natural, "250 Taylor" to refer to activities related to the Company's move to its new headquarters and operations center, to the new building itself—which is located at 250 SW Taylor Street in downtown Portland, as well as to the decision-making process that led to that move.[1]

Q. Where was NW Natural's former headquarters located?

A. NW Natural's headquarters was located at 220 NW Second Avenue in the Chinatown/Old Town neighborhood of NW Portland, in the building known as One Pacific Square (OPS). OPS served as the location of the Company's headquarters since its construction in 1983.[2]

Q. What needs or concerns did NW Natural have that were not being met by OPS?

A. The Company considered OPS' seismic resiliency, (i.e., ability to remain operational during and following a major earthquake), to be inadequate in the event of either a "large seismic event"[3] or a "major seismic event."[4] Additionally, the Company was concerned about security incidents that had occurred in the Old Town (Portland) location of OPS.[5]

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[1] Exhibit NW Natural/500 Pipes/1. See also https://www.loopnet.com/Listing/250-SW-Taylor-St-Portland-OR/18206675/ (accessed by Staff on April 1, 2020).

[2] Exhibit NW Natural/500 Pipes/5.

[3] Exhibit NW Natural/100 Anderson/4.

[4] Exhibit NW Natural/500 Pipes/14.

[5] Exhibit NW Natural/500 Pipes/5-6.

Q. How does NW Natural define the terms "seismic resiliency" and "large seismic event" (or "major seismic event")?

A. NW Natural defines "seismic resiliency" as the Company's "ability to remain operational throughout and immediately following a major earthquake," and clarified that "seismic resiliency" includes the ability to withstand the estimated geophysical effects of a magnitude 9.0 Cascadia subduction earthquake.[6, 7] NW Natural relies on its seismic consultant's[8] definition of "major seismic event," which is "the earthquake hazards occurring in a 2,500-year event or a 500-year event" and the Company clarified that its definition of "major seismic event" included a magnitude 9.0 Cascadia subduction zone earthquake.[9]

Q. When and how did NW Natural begin considering moving its headquarters to a new location.

A. NW Natural initiated its decision-making process by forming a project team that met on April 4, 2013 with representatives of Cushman and Wakefield (Cushman), the Company's external real estate consultant, "to start the strategy review, timing and process of evaluating the current leased site, OPS, and other site options."[10] The project team was comprised of NW Natural's Senior Vice President of Facilities and Human Resources, its

[6] NW Natural's response to Staff Data Request 315.

[7] See the Oregon Office of Emergency Management's discussion of the Cascadia Subduction Zone and associated earthquakes at https://www.oregon.gov/oem/hazardsprep/Pages/Cascadia-Subduction-Zone.aspx (accessed by Staff on April 3, 2020).

[8] Exhibit NW Natural Pipes/9.

[9] NW Natural's response to Staff Data Request 316.

[10] NW Natural's response to Staff Data Request 320.

General Counsel, and its Managers of Security and Facilities and of Risk and Land.

Subsequent to this meeting NW Natural formed an internal Headquarters ("HQ") Steering Committee in 2014 "to provide direction and oversight for the Company's investigation into alternative headquarters options." The Committee made recommendations to the Company's executive committee and Board of Directors "concerning significant decisions such as the final selection of the headquarters location and certain project budgets…"[11]

Q. Did NW Natural negotiate additional lease period to provide time to perform its strategy review and process of evaluation?

A. Yes. NW Natural negotiated an amendment to its OPS lease that provided a two-year extension from the June 1, 2018 termination date of its fourth and final five-year OPS lease extension to May 31, 2020.[12]

Q. Did NW Natural develop and implement a process for considering alternatives to its OPS headquarters?

A. Yes. NW Natural implemented a process that had three phases. NW Natural's testimony in Exhibit NW Natural/500 includes an extended discussion of the three-phased process the Company used to consider its alternatives.[13] In Phase 1, the Company "gathered information regarding potential headquarters locations, developed location and facility selection criteria, and assessed risk

[11] Exhibit NW Natural Pipes/6.
[12] Exhibit NW Natural/500 Pipes/5.
[13] Exhibit NW Natural/500 Pipes/7-36.

factors related to the seismic resilience of OPS and potential alternative locations."[14]

In Phase 2, the Company issued a request for information ("RFI") to the broker, developer and landlord community to solicit a broad range of responses, followed by an request for proposals ("RFP") for the top candidates using the selection criteria identified in Phase 1."[15] Phase 2 "culminated in the selection and lease negotiation of the preferred location and facility, 250 Taylor."[16]

In Phase 3 the Company implemented its decision to relocate its headquarters and operations center to 250 Taylor, making decisions regarding "…final interior design, construction bid process, FFE, and physical relocation to the new site."[17]

NW Natural's testimony includes a timeline with key decision points and the timing for each phase as Figure 1 at NW Natural/500 Pipes/8.

Phase 1

Q. What were the major components of Phase 1?

A. NW Natural's testimony lists three major components of the scope of work for Phase 1:[18]

[14] Exhibit NW Natural/500 Pipes/7.
[15] Ibid.
[16] Ibid.
[17] Ibid. "FFE" refers to a structure's "Furniture, Fixtures, and Equipment."
[18] Exhibit NW Natural/500 Pipes/10.

1. Analysis of the risk factors related to the seismic resilience of the OPS building and location.
2. Development and preliminary analysis of building evaluation criteria to guide the Company's decision-making process.
3. Development of a list of alternative geographic locations for further analysis.

Q. What external consultants did NW Natural engage in Phase 1 and what was each consultant's role?

A. NW Natural contracted with three consultants in Phase 1. KPFF Consulting Engineers (KPFF) was the seismic consultant, tasked in Phase 1 with providing seismic resiliency design and expertise, and seismic review of OPS. Leland Consulting Group (Leland) was to provide "strategic analysis, real estate planning, evaluation and optimization services;" and Cushman & Wakefield (Cushman) was to provide real estate and brokerage services.[19]

Q. What was the result of Phase 1?

Phase 1 was completed in late 2015, and culminated in the "Phase 1 Report," which was co-authored by Leland and Cushman.[20] Of particular note, seismic safety emerged as an important criterion in a relocation decision. The Report found

> "[m]ore work is needed to understand NW Natural's seismic safety needs and possible building standards. NW Natural has noted that there are many functions such as gas control, resource

[19] Exhibit NW Natural/500 Pipes/8-10.

[20] NW Natural's testimony included the Phase 1 Report as Exhibit NW Natural/501.

management/dispatch, and other critical functions that need to be operational following a seismic event. While the backup emergency operations center at Sherwood would suffice for other emergency events, NW Natural is continuing to evaluate if this is sufficient following a seismic event, particularly given likely travel restrictions after such an event. A preliminary seismic analysis indicated that OPS would not be functional following a significant seismic event."[21]

Q. How did NW Natural proceed with the seismic evaluation of OPS?

A. NW Natural's testimony states that the Company hired KPFF to perform seismic evaluations of its facilities, with the first evaluation of OPS in 2015 "to better understand the seismic integrity of the building in the event of a major earthquake."[22] KPFF analyzed the building's performance under the current building codes. Additionally, KPFF evaluated OPS to determine whether it met the acceptance criteria of the American Society of Civil Engineers standard ASCE 41-13, which NW Natural states is the standard "recognized by State and international building codes as the standard for evaluating seismic performance of existing buildings."[23]

Q. Did NW Natural's testimony discuss the results of KPFF's seismic evaluation of OPS?

A. Yes. The Company discussed the seismic evaluation of OPS in confidential testimony beginning on Exhibit NW Natural/500 Pipes/13.

[21] Exhibit NW Natural/501 Pipes/4.
[22] Exhibit NW Natural/500 Pipes/13.
[23] Ibid.

Q. What are the important points resulting from KPFF's seismic evaluation of OPS relative to Phase 1?

A. NW Natural's testimony includes that **[begin confidential]** [redacted][24] [redacted][25] [redacted][26] **[end confidential]**

Q. Did NW Natural eliminate OPS from consideration as a headquarters building and location as a result of its seismic analysis?

[24] Exhibit NW Natural/500 Pipes/13.

[25] Ibid.

[26] Exhibit NW Natural/500 Pipes/27.

A. It did not, but did impose a condition on OPS remaining a candidate. NW Natural's testimony states that the Company "determined that any further consideration of OPS would need to include evaluation of seismic retrofitting to enhance the seismic performance of the building for NW Natural's operational needs."[27]

Q. Is NW Natural concerned with risks associated with accessing its headquarters and operational center following a seismic event a concern?

A. Yes. NW Natural cites building accessibility following a major seismic event as an important consideration for its headquarters location.[28] Staff believes the Company potentially faces, subsequent to a major seismic event, perhaps an even larger issue associated with accessibility for the 140 FTEs the Company says are engaged in critical utility operations.[29]

Q. Please state Staff's concern with accessibility.

A. Staff is concerned that, following a major seismic event, many relevant bridges might not be operable, and many of the 140 FTEs will either be unable to reach a downtown Portland or west side location. A Multnomah County website addressing, among other questions, the importance of the County's capital improvement plan to increase the seismic resiliency of the bridges operated by the County that span the Willamette River, states that

[27] Exhibit NW Natural/500 Pipes/15.

[28] Exhibit NW Natural/500 Pipes/2 and Pipes/9.

[29] NW Natural provided those workgroups performing critical utility operations, as of year-end 2019, in response to Staff Data Request 312 Staff aggregated those values to 140 FTE.

"Portland's aging downtown bridges are not expected to withstand a major earthquake."[30]

Q. What portion of the 140 FTEs engaged in critical utility work, as of year-end 2019 and discussed above, are likely to require crossing one or both of the Columbia and Willamette Rivers from their residential locations?

A. NW Natural's response to Staff Data Request 312 included that, of these 140 FTEs, about 77 (55 percent) live either east of the Willamette River or north of the Columbia River (or both). As far as being in or near their residences and not at work, probabilities are probably greater for the former than for the later.

Q. Did NW Natural's testimony discuss the seismic resiliency of its Sherwood facility?

A. Yes. The key findings regarding resiliency in the Phase 1 Report include that

> "NW Natural has noted that there are many functions such as gas control, resource management/dispatch, and other critical functions that need to be operational following a seismic event. While the backup emergency operations center at Sherwood would suffice for other emergency events, NW Natural is continuing to evaluate if this is sufficient following a seismic event, particularly given likely travel restrictions after such an event."[31]

[30] See at https://multco.us/earthquake-ready-burnside-bridge/frequently-asked-questions (accessed by Staff on April 6, 2020). See also Multnomah County's website regarding its Sellwood Bridge project at http://www.sellwoodbridge.org/?p=why-is-it-needed (accessed by Staff on April 6, 2020).

[31] Page 2 of the Phase 1 Report, appearing at Exhibit NW Natural/501 Pipes/4.

Additionally and as included in a footnote above, NW Natural states at Exhibit NW Natural/500 Pipes/12 that "[t]o date, seismic upgrades have been completed at the Company's Sherwood, Salem and Eugene facilities."

Q. Another component of Phase 1 was developing a list of alternative geographic locations for further analysis. Please discuss this aspect of NW Natural's process and decision-making.

A. Staff described the criteria above NW Natural used for evaluation of alternatives to remaining in an OPS building that was not retro-fitted to increase its seismic resiliency. The Company identified several "must-haves" it would require of any location based on stakeholder survey results. Staff replicates NW Natural's listing of these below:

- Robust financial support to demonstrate the prudency of our decisions;
- A space that reflects our culture and identity;
- Better lighting and climate control in the building;
- Improved IT infrastructure; and
- Seismic safety.[32]

Q. Did NW Natural identify its high-level options?

A. Yes. The Company's testimony states that it decided to evaluate alternatives in a Portland central city area or relocate to Vancouver or a Portland suburb. The Company performed an analysis of where its OPS-located employees

[32] Exhibit NW Natural/500 Pipes/16.

lived and decided a move to either Vancouver or a Portland suburb was neither feasible nor desirable, and focused its considerations to six geographic submarkets within Portland's central city. These submarkets were the Pearl District, Old Town/Chinatown, the South Waterfront area, the Lloyd District, the Central Eastside business area, and downtown Portland's Central Business District.[33]

Q. Did NW Natural eliminate any of these areas from further consideration?

A. Yes. The Company eliminated the Pearl District and the South Waterfront area from further consideration based on recommendations from its consultants. The consultants' concerns with these two areas related to seismic resiliency and potential flooding.[34]

Q. Did NW Natural make any high-level comparisons of the four remaining areas?

A. Yes. The Company stated that the Lloyd District and Central Eastside areas were, on a preliminary basis, ranked higher than the other two due to lower seismic risks and lower crime rates. Additionally, NW Natural noted that its employees had shared concerns regarding employee safety in the Old Town neighborhood.

Q. What final task remained in Phase 1?

A. NW Natural's consultants evaluated the options of renewing the lease at OPS, relocating to an existing building, or relocating to a new building. Their

[33] Exhibit NW Natural/500 Pipes/17.

[34] Ibid.

analysis, based on the building criteria and the results obtained from the stakeholder survey, ranked relocating to a new building as the preferred option, followed by renewing the lease at OPS.[35]

Q. What conclusions does Staff draw from the Phase 1 Report regarding seismic resiliency?

A. Staff concludes that NW Natural considers the Company to have several critical functions that "need to be operational following a seismic event," and that it considered OPS' seismic resiliency to be inadequate in the event of a large (or major) seismic event.

Phase 2

Q. What scope of work did Phase 2 include?

A. NW Natural's testimony included the following as included in the scope of work:

- Workplace strategy analysis to determine current and future space needs;
- Selecting an architecture firm to serve as NW Natural's architect for test fits and space planning;
- Issuing an RFI and RFP to the real estate broker community, potential landlords and developers;
- Evaluating responses to the RFI and RFP against the criteria developed in Phase 1;
- Refining the seismic suitability criteria and evaluating each option seismically;

[35] Exhibit NW Natural/500 Pipes/20.

- Conducting detailed financial analysis of the short-listed options; and
- Negotiating with finalist options to achieve optimal 1 lease terms prior to selection.[36]

NW Natural included the Phase 2 Report, dated September 2017, in its testimony as Exhibit NW Natural/502.

Q. What does Staff see as the major results of the workplace strategy analysis?

A. This analysis concluded that NW Natural's needs were best met through a single location for its headquarters/operations center employees. It also concluded that the total space requirement for the Company in 2020 would be approximately 167 thousand square feet.[37]

Q. What was the outcome of the RFI in Phase 2?

A. NW Natural selected four potential sites for detailed analysis. One site was NW Natural's existing headquarters, the OPS building in the Old Town neighborhood. The Company retained it, even though addressing its seismic-related concerns would be necessary, in order to enhance its negotiating position and also as a potential fallback option, should other sites not work out. Oregon Square in the Lloyd District; Block 38," a proposed building in the Central Business District to be located at the west end of the Morrison Bridge; and 250 Taylor.[38]

Q. How did these four sites score on NW Natural's evaluation criteria?

[36] Exhibit NW Natural/500 Pipes/22-23.

[37] Exhibit NW Natural/500 Pipes/24 and Exhibit NW Natural/502 Pipes/6.

[38] Exhibit NW Natural/500 Pipes/25-26.

A. The Phase 2 Report includes a ranking of the four by multiple attributes, which Staff's testimony above has referred to as sub-criteria. Generally, OPS was ranked fourth on seismic risk and employee safety, Oregon Square ranked first and 250 Taylor second on seismic risk. Block 38 had the second lowest ranking on seismic risk. Oregon Square, 250 Taylor, and Block 38 had comparable scores on employee safety.[39]

Q. Did the RFP responses for these four sites propose an arrangement that resulted in NW Natural's ownership?

A. No. NW Natural's testimony specifies that all four proposed a leasing arrangement.[40]

Q. How did the four sites compare financially at this point?

A. NW Natural's testimony includes a table with the 15-year Present Value of Revenue Requirements (PVRR) for each. The PVRR of 250 Taylor was approximately $1.8 million lower than Oregon Square, which was the second lowest cost site. OPS and Block 38 were $7.3 million and $9.1 million, respectively, more expensive than 250 Taylor on the basis of PVRR.[41] NW Natural included financial information for each of the four sites in Exhibit NW Natural/503. Staff replicates four summary financial measures from Exhibit NW Natural/503 for each of the four sites in Table 1.

[39] Exhibit NW Natural/502 Pipes/35, which is page 35 of the Phase 2 Report.
[40] Exhibit NW Natural/500 Pipes/26.
[41] Exhibit NW Natural/500 Pipes/27.

Table 1 — Criteria for Evaluating Potential HQ Locations

$Millions	OPS[42]	Block 38	Oregon Square	250 Taylor
15-year NWN Capital Costs	$21.7	$8.6	$12.0	$11.3
15-year O&M Costs	$130.6	$161.4	$146.3	$143.9
15-year PVRR of Leased Space	$98.1	$106.5	$100.2	$97.5
15-year PVRR of Leased Space including parking[43]	$98.1	$99.8	$92.6	$90.7

Q. What was the assessment of seismic risk for OPS?

A. NW Natural's testimony states that **[begin confidential]** [redacted] **[end confidential]**

Q. Why does NW Natural require parking at its headquarters location?

A. NW Natural's testimony on 250 Taylor includes that it will utilize nine parking spaces, with six reserved for utility vehicles and three for visitor parking and that it sought rate recovery in the current proceeding for only the nine parking spaces.[44]

[42] The 15-year NWN Capital Costs and both PVRR values for OPS include an estimated $12 million for a seismic retrofitting of OPS.

[43] The 15-year PVRR for locations other than OPS *declines* when parking costs are added due to the estimated $8.5 million realized with the sale of NW Natural's "Truck Lot," which is Company-owned property located near OPS and used for parking.

[44] Exhibit NW Natural/500 Pipes/41.

Q. Were there issues, including seismic issues, in the Block 38 proposal?

A. Yes. The Company's testimony states that one of the reasons it rejected Block 38 was seismic concerns.[45] The evaluation of Block 38 included that it would potentially be inaccessible following a major seismic event. Other reasons for rejecting this option were that it had the second highest lease costs and that NW Natural had security concerns due to it being a mixed-use building. NW Natural's testimony states that mixed-use buildings (such as Block 38) with residential apartments, are more susceptible to fires that might result in evacuation of the entire building, including such critical functions as gas control.[46]

Q. How did NW Natural decide between the two remaining options of Oregon Square and 250 Taylor?

A. NW Natural's testimony states that the Company initiated negotiations regarding these two options with the developers of each property. The negotiations involved lease terms, the building program, and other terms.[47]

Q. How did these two compare financially?

A. NW Natural's financial analysis results depicted in Table 1 indicate the two were relatively close on a 15-year PVRR basis, with Oregon Square's estimated 15-year PVRR about $2.7 million higher than 250 Taylor's for leased space only and about $1.9 million with cost for parking space included.

[45] Exhibit NW Natural/500 Pipes/27.
[46] Exhibit NW Natural/500 Pipes/28-29.
[47] Exhibit NW Natural/500 Pipes/29.

Q. Did NW Natural's negotiations surface issues with one of the two proposals?

A. Yes. Oregon Square had two issues at this stage of negotiations that 250 Taylor did not. First, the One Square developer's planned to develop the site in stages, resulting in issues related to NW Natural's use of a parking facility that was to be shared with other tenants. More consequentially, the Oregon Square developer was "unwilling to guarantee in writing several terms that were initially promised," including that the developer would not guarantee a construction timeline that would meet NW Natural's needs.[48]

Q. Did a potential 250 Taylor deal have issues as well?

A. NW Natural's testimony does not identify issues at this stage of negotiations. The Company continued negotiations with the 250 Taylor developer and assessed developer risk, reviewed the results of additional seismic research, and conducted additional financial analysis of the deal. These activities resulted in NW Natural removing Oregon Square as an option[49] and contracting to lease 250 Taylor. NW Natural signed the 250 Taylor lease in October 2017.

Q. What are the important terms of NW Natural's 250 Taylor lease?

A. NW Natural's lease is for an initial term of 20 years beginning upon occupancy, which the Company expected to be February 17, 2020. The Company has two optional seven-year lease renewals after the initial term.

[48] Exhibit NW Natural/500 Pipes/30.

[49] Exhibit NW Natural/500 Pipes/30-31.

NW Natural has a 100 percent share of the total building's rentable area, which is approximately 180 thousand square feet, essentially all of which is office rentable space, with 834 square feet for storage space. The lease uses a $33.95 per square foot rate for office space and $18.00 per square feet for the 834 square feet of storage space.[50] Staff's calculation based on these parameters provides the same $6.1 million base annual space rent in NW Natural's testimony.[51] The lease includes a 2.5 percent annual base rent escalation factor[52] and NW Natural begins its lease payments in June 2020.[53]

Phase 3

Q. What were the major components of Phase 3?

A. Phase 3, which began after NW Natural executed the lease agreement for 250 Taylor, had three primary objectives: overseeing the final space design and tenant improvements, procuring furniture, fittings, and equipment (FFE), and finalizing relocation to 250 Taylor, including lease termination and building turnover for OPS. Phase 3 also includes activities relate to the shell and core development of 250 Taylor.[54]

[50] Exhibit NW Natural/500 Pipes/33-34.

[51] Exhibit NW Natural/500 Pipes/33-34. While NW Natural's calculation does not include the storage space, Staff notes that the storage amount represents 0.2 percent of the calculated total.

[52] Exhibit NW Natural/500 Pipes/34.

[53] Exhibit NW Natural/500 Pipes/37.

[54] The building was not yet complete at the beginning of Phase 3, so NW Natural had some input into the design and construction of the base building; i.e., shell and core development.

Q. What costs associated with 250 Taylor is NW Natural seeking rate recovery of in this proceeding?

A. The costs associated with 250 Taylor NW Natural for which NW Natural is seeking rate recovery are either Operations and Maintenance (O&M) costs or capital costs. O&M costs include the lease and costs for utility services, property management, building security, custodial service, and expected maintenance.

NW Natural is also seeking rate recovery associated with the increment to its Oregon-allocated rate base associated with the Company's leasehold improvements and other capitalized costs. These latter costs include both return on and return of the Oregon-allocated rate base additions associated with 250 Taylor.

The Company indicates there will be some one-time expenses associated with its early 2020 move to 250 Taylor. These include approximately $0.2 million in moving expenses and approximately $0.3 million in a one-time OPS vacation and disposition expense, which turns control of OPS back to its landlord. However, the Company states these one-time costs will be recovered from shareholders.[55]

Q. Did NW Natural's estimated cost for leasehold improvements change from its earlier estimate?

[55] Exhibit NW Natural/500 Pipes/42.

A. Yes. NW Natural previously estimated a construction cost for its leasehold improvements of "roughly $100 per square foot." The Company's testimony updates that estimate to $151.44 per square foot, not including utility-specific costs such as the build-out of a gas control room.[56]

Q. Did NW Natural's testimony explain this large change?

A. NW Natural's explanation is that the cost increase is largely attributable to increases in the cost of construction materials "and the amount of construction activity occurring in Portland." The Company's testifies that it considers the updated and higher estimates to be reasonable, and states that the Portland market cost for standard office tenant improvements in 2019 is "averaging roughly $164 per square foot," and cites Turner Construction as the source of this value.[57]

Q. Does NW Natural's testimony discuss any offsets to the capital costs associated with 250 Taylor?

A. Yes. The Company states that it negotiated a $13.0 million tenant improvement allowance from the developer plus a $590 thousand allowance for it limiting the scope of core and shell construction. NW Natural states that it will apply these amounts as an offset to its costs for tenant improvement. NW Natural also offset these costs with proceeds from the sale of its truck lot.

Q. What is the annual lease amount in NW Natural's requested annual revenue requirement for the Test Year in this proceeding?

[56] Exhibit NW Natural/500 Pipes/43.

[57] Ibid.

A. The lease amount for the Test Year is $10.5 million. This includes $8.4 million for the lease expense, $1.0 million for amortization of NW Natural's tenant improvements, $1.0 million for operating expenses, such those O&M costs Staff lists above, and $0.2 million for parking space for Company vehicles.[58] Regarding the sublease space, Staff notes that an analysis at Exhibit NW Natural/502 Pipes/36 dated 9/18/17 includes 18,026 square feet of available sublease space for 250 Taylor, while Exhibit NW Natural/904 has a total of 8,614 available sublease space, which is a more than 50 percent reduction.

Q. The allocation on the basis of square footage described above implies using the same value per square foot for utility space as it does for subleased space. Is this appropriate?

A. Perhaps. Exhibit NW Natural/904 has 7,158 square feet identified as "Sublease Office Space Sq. Ft." and 1,456 square feet identified as "Sublease Retail Space Sq. Ft." While Staff's intuition is that ground floor retail space should have a higher value per square foot than office space on multiple floors in the same building, the amounts above indicate NW Natural's exhibit reflects a total sublease space that is over 83 percent office space. Additionally, Staff notes that the price of smaller leased spaces may have a premium over larger spaces on a square footage basis.

[58] Based on NW Natural's response to Staff Data Request 359. All values here on an Oregon-allocated basis.

Q. What amount of NW Natural's lease expense, tenant improvement amortization expense, and operating expenses does the Company include as an increment to rate base?

A. The Company's testimony states that 35 percent of the total of these Oregon-allocated expenses are "subject to a capital administrative transfer" and will be transferred to capital (rate base). After this transfer, and the allocation from system to Oregon, the total annual lease amount is reduced to $6.9 million on an Oregon-allocated basis.[59]

Q. How do 250 Taylor costs in NW Natural's requested revenue requirement in this proceeding compare with those of OPS in the calendar 2019 Base Year?

A. The costs for 250 Taylor in the Test Year revenue requirement are substantially greater than those of OPS in the calendar 2019 Base Year.[60] The values in Table 2 below show a comparison between the 250 Taylor costs in the Test Year and OPS costs in the Base Year.[61]

[59] Ibid, and Exhibit NW Natural/900 Davilla/11.

[60] NW Natural developed the calendar 2019 Test Year using actuals for January – September and estimates for October – December estimates. See Exhibit NW Natural/900 Davilla/2-3.

[61] NW Natural's response to Staff Data Request 359. See also Exhibit NW Natural/904. Note that the OPS Base Year values do not include any costs associated with its seismic retrofit.

Table 2 — 250 Taylor Test Year and OPS Base Year Costs

$Thousands	250 Taylor Test Year	OPS 2019 Base Year	Change
Total Lease Expense	5,431	2,596	2,834
Tenant Improvement Amortization	651	25	626
Operating Expense	637	134	502
Company Vehicle Parking	200	65	136
Total HQ Expense	6,919	2,821	4,099
In-year Rate Base Addition	3,618	1,484	2,134

Q. What portion of NW Natural's requested $71.4 million increase in revenue requirement from base rates[62] in this proceeding do the costs of 250 Taylor represent?

A. Approximately 8.5 percent, after the administrative transfer to capital (rate base) and inclusion of a return on this rate base addition.[63]

Q. Did NW Natural remove costs associated with OPS from the requested Test Year revenue requirement?

A. Yes. The Company testifies that "[a]ll existing One Pacific Square ("OPS") headquarters expenses were removed from the Test Year."[64]

Q. What issues does Staff have regarding NW Natural's decision-making with respect to its headquarters location?

[62] NW Natural/100 Anderson/12

[63] This calculation uses a 1.37 gross-up factor and is based on values in NW Natura's response to Staff Data Request 359.

[64] Ibid.

A. Staff has two issues regarding NW Natural's decision-making process. The first issue is that the Company apparently did not consider the financial impacts the use of its Sherwood facility for all or some of the workgroups engaged in critical utility operations. NW Natural apparently considers Sherwood solely as a backup site to a seismically resilient headquarters site for such workgroups.

Staff's second issue is that NW Natural presented no information regarding the opportunity cost of keeping the approximately 600 headquarters employees at one location. The Company did indicate that splitting its business functions into multiple buildings was viewed as suboptimal, but would have been considered if financial, operational, seismic, or other factors made this the best alternative.[65] NW Natural's testimony and associated exhibits provides no evidence that such a splitting would not reduce ratepayer costs.

Q. Did the process and resulting NW Natural decision-making reflect a least-cost least-risk approach?

A. Yes; Staff believes it did.

Q. What does Staff recommend?

A. Staff recommends the Commission find NW Natural's decision to relocate its headquarters/operations center from OPS to 250 Taylor to be prudent, based

[65] Exhibit NW Natural/500 Pipes/20-21.

on the assumptions made and analysis performed by the Company, as described and presented in its testimony and exhibits in this proceeding.

ISSUE 2. SEISMIC RISK AND RISK MITIGATION

Q. Does NW Natural discuss seismic risk in a context other than 250 Taylor?

A. Yes. NW Natural's testimony describes a seismic assessment—currently underway—of its transmission and high-pressure distribution pipeline system. The Company states that this assessment "will be used to identify, plan and prioritize projects to address seismic resiliency."[66] This project is a safety-related project and discussed in NW Natural's 2019 Safety Project Plan.[67]

Q. What is NW Natural's impetus to make such an assessment?

A. NW Natural discusses the evolution over the last decade of state policy, culminating in Governor Kate Brown's "Resiliency 2025" plan (or policy agenda),[68, 69] and states its support of the 2025 Resiliency plan.

Q. Does the "Resiliency 2025" address seismic risks pertaining to NW Natural facilities?

A. Yes. It identifies Oregon's Critical Energy Infrastructure (CEI) Hub as a six mile long footprint on and adjacent to the lower Willamette River between Portland's Fremont Bridge and the southern end of Sauvie Island. This footprint includes natural gas transmission pipelines and a liquefied natural gas (LNG) storage facility.[70] NW Natural is the owner/operator of its Portland

[66] Exhibit NW Natural/400 Karney/43-44.

[67] NW Natural filed its 2019 Safety Project Plan on September 30, 2019 in Docket No. UM 1900.

[68] Ibid.

[69] The Resiliency 2025 Plan is located at https://www.oregon.gov/gov/policy/Documents/resiliency-policy-agenda.pdf and is dated October 16, 2018 (accessed by Staff on April 7, 2020).

[70] Ibid, page 9.

LNG storage facility, which is located within the described footprint, as well as the owner/operator of multiple high-pressure natural gas pipelines located in or transiting through this footprint. It also states that "significant seismic risk exists in the CEI Hub."[71]

Q. How does NW Natural's seismic assessment relate to the goals of "Resiliency 2025?"

A. A key strategy of the "Resiliency 2025" policy agenda is to "[d]evelop a plan for the Critical Energy Infrastructure Hub to prevent and mitigate catastrophic failure and ensure fuel supplies and alternate energy sources are available to responders and the public."[72] NW Natural views its seismic assessment as a proactive step to "study, understand and act towards building resiliency of its critical energy facilities, in order to deliver safe and reliable service and work towards relatively short restoration timeframes after a major earthquake."

Q. What has NW Natural accomplished to date?

A. NW Natural's testimony states that it has "1) upgraded several critical facilities to survive a major seismic event and allow for business continuity, 2) improved pipeline safety and seismic resilience through NW Natural's Enhance Pipeline Safety Programs, and 3) partnered with regional stakeholders to study and improve critical infrastructure performance."[73] Additionally, the Company completed a pilot study of its transmission and

[71] Ibid.

[72] Ibid, page 3.

[73] Exhibit NW Natural/400 Karney/44.

high-pressure distribution systems in July 2019 and used the study's results to "identify projects to replace and/or fortify facilities determined to be vulnerable during events such as a Cascadia Subduction Zone earthquake."[74] NW Natural, after completing the pilot study, began examining "all remaining 1,259 miles of transmission and high pressure pipelines,"[75] which the Company plans to complete in 2020.

Q. What is NW Natural's purpose of this examination?

A. NW Natural will better understand the relationship between the gas distribution system and the geography/geology within its service area after the Company completes this examination, and use its learnings to prioritize projects and develop programs to address the threat of seismic activity.[76]

Q. Is NW Natural requesting rate recovery through a Safety Cost Recovery Mechanism (SCRM) for its costs associated with achieving greater seismic resiliency?

A. No. The Company does indicate in testimony that it considers several significant safety initiatives, specifically including the seismic assessment currently underway.[77]

Q. What does Staff recommend regarding NW Natural's activities related to seismic risk mitigation?

A. Staff has no recommendations regarding these activities at this time.

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[74] Ibid, page 45.

[75] Ibid.

[76] Ibid.

[77] Ibid, pages 49-50.

ISSUE 3. PENSION, OTHER POST-RETIREMENT BENEFITS AND RELATED

Pension and Related Issues

Q. Does NW Natural use Financial Accounting Standards (FAS) Number 87 (FAS 87) in calculating its pension costs?

A. NW Natural's confidential response to Staff Data Request 346 states that **[begin confidential]** [redacted] **[end confidential]** Additionally, NW Natural states that it includes the service and non-service components of ASC in its requested revenue requirement in this proceeding and that its treatment of pension

expense is consistent with the outcome of the Company's last general rate case.[78]

Q. Does Staff have any recommendations regarding NW Natural's accounting treatment of pension costs for ratemaking purposes?

A. No; not at this time.

Q. What are the two components of pension costs?

A. Pension costs have a service component and a non-service component. Service costs are included in payroll overhead rates that are allocated to O&M expense and capital based on the composition of NW Natural's payroll.[79] Non-service costs are directly expensed as an O&M expense.[80] NW Natural's pension costs are estimated by its actuary, and the Company uses values for the Test Year from the latest forecast provided prior to NW Natural's initial filing in the proceeding at hand. To calculate Test Year costs, the Company used two-twelfths of the 2020 and ten-twelfths of the 2021 forecasted ASC 715 pension expense to align the cost forecast with the Test Year. The Company's response to Standard Data Request 60 stated that "[t]he Company's pension plans are actuarially measured annually on December 31 and this forecasts are calculated and provided from the Company's actuaries on a calendar year basis."

Q. When did NW Natural file its initial application in this proceeding?

[78] Exhibit NW Natural/1000 Walker/21.

[79] This allocation based on payroll includes allocations to the two jurisdictions and between utility and non-utility.

[80] NW Natural's testimony describes the two components at Exhibit NW Natural/900 Davilla/19-20.

A. The Company's filing was on December 30, 2019. NW Natural's response to Standard Data Request 59 includes that "[t]he Company will provided updated data for the 12-months ended December 2019 (Base Year) as soon as it its available." Staff assumes NW Natural's update will be provided as a supplemental response to Standard Data Request 59 in the near future.

Q. What pension costs is NW Natural requesting recovery of in this proceeding?

A. NW Natural's testimony includes an actuary-forecasted total pension cost for the Test Year of $16.9 million. This is composed of a $6.5 million service cost and a $9.3 million non-service cost, with the latter on an Oregon-allocated basis.[81] The Company states that the Oregon-allocated portions of each component is included in revenue requirement.[82]

Q. Did Staff review the parameters used to calculate this cost?

A. Yes. NW Natural, in its confidential response to Standard Data Request 59, included a Test Year expected return on assets (EROA) and a Test Year discount rate for annual expense of **[begin confidential]** [redacted] **[end confidential]** respectively. Staff averaged the parameter values used by the other five jurisdictional energy utilities in 2019, as reported in the utilities' respective SEC Forms 10K or Annual Reports and obtained values that were **[begin confidential]** [redacted]

[81] Exhibit NW Natural/900 Davilla/19.

[82] Exhibit NW Natural/1000 Walker/21.

[redacted] **[end confidential]** respectively, than the values proposed by NW Natural for use in the Test Year.

Q. Does Staff make an adjustment to NW Natural's proposed pension cost for these differences?

A. Yes. Standard Data Request 60 requests an elasticity measure for pension costs and asks the utility to supply estimated changes in pension costs associated with a +/- 0.25 percent change in the expected return on pension assets (EROA) and, separately, in the discount rate. Staff used the dollar values provided—on a system basis—to calculate the impact of NW Natural using rates equaling that of the other five jurisdictional energy utilities, and then calculated the Oregon-allocated values using the same allocation factor used by NW Natural.[83].

Q. What were the results of Staff's calculations?

A. Use of the average EROA *increased* pension cost by $1,544 thousand for the Test Year (NW Natural EROA *lower than average*) and use of the average discount rate *decreased* pension cost by $5,362 thousand (NW Natural discount rate *lower than average*), with both values on a Total Company basis. The sum of these two changes, multiplied by the appropriate inter-jurisdictional allocation value, is an overall reduction in pension cost of $3,406 thousand on an Oregon-allocated basis for the Test Year.

[83] Table 4 at NW Natural/900 Davilla/20.

Q. What does Staff recommend regarding NW Natural's proposed pension costs?

A. Staff recommends the Commission require NW Natural to use the average value of the other five jurisdictional energy utilities for its pension EROA and discount rate, which reduces Test Year pension costs by approximately $3.4 million.

Q. For purposes of ratemaking in this proceeding, does NW Natural's treatment of pension costs conform to Order No. 18-419 in Docket No. UG 344, the Company's last general rate case proceeding?

A. Yes. Order No. 11-051 in Docket No. UM 1475 established a pension balancing account to track the differences between the $3.8 million collected annually in rates and the actual FAS 87 pension expenses.

The Commission, in NW Natural's last general rate, directed the Company to "freeze the pension balancing account," authorized the Company to set its FAS 87 expense to be included in rates at $8.1 million annually, and ordered NW Natural to file rates consistent with those decisions.[84]

NW Natural's testimony attests that its "treatment of pension expense is consistent with the outcome of the Company's last general rate case," and states that the Test Year pension expense provided by its actuary is a resumption of the traditional ratemaking required by Order No. 18-419.[85]

[84] Order No. 18-419 in Docket No. UG 344.

[85] Exhibit NW Natural/1000 Walker/21.

Other post-Retirement Benefits (OPEB)

Q. Does NW Natural use Financial Accounting Standards (FAS) Number 106 (FAS 106) in calculating its OPEB costs?

A. NW Natural's confidential response to Staff Data Request 346 states that **[begin confidential]** [redacted] **[end confidential]**

Q. Does Staff have any recommendations regarding NW Natural's accounting treatment of OPEB costs for ratemaking purposes?

A. No; not at this time.

Q. What OPEB costs is NW Natural requesting recovery of in this proceeding?

A. NW Natural's testimony includes a total OPEB cost for the Test Year of $863 thousand on an Oregon-allocated basis.[86]

Q. Did Staff review the parameters used to calculate this cost?

A. Yes. NW Natural, in its confidential response to Standard Data Request 59, included a Test Year expected return on assets (EROA) and a Test Year discount rate for annual expense of **[begin confidential]** [redacted], **[end confidential]** respectively. Staff averaged, in the same approach used for pension cost parameters, the parameter values used by the other five jurisdictional energy utilities in 2019, as reported in the utilities' respective SEC Forms 10K or Annual Reports and obtained values that were **[begin confidential]** [redacted], **[end confidential]** respectively, than the values proposed by NW Natural for use in the Test Year.

Q. Did Staff calculate an adjustment to NW Natural's proposed OPEB cost for these differences?

A. Yes. Standard Data Request 60 requests an elasticity measure for OPEB costs and asks the utility to supply estimated changes in OPEB costs associated with a +/- 0.25 percent change in the EROA and, separately, in the discount rate. Staff used the dollar values provided—on a system basis—to

[86] Exhibit NW Natural/900 Davilla/18.

calculate the impact of NW Natural using rates equaling that of the other five jurisdictional energy utilities.

Q. What were the results of Staff's calculations?

A. Use of the average EROA indicated an *increased* pension cost of $42.6 million on a Total Company basis for the Test Year (NW Natural EROA *lower than average*). This is an anomalous result, and one that partially results from using what is nearly a point elasticity measure (+/- 0.25%) instead of an arc elasticity measure for this much larger percentage change in EROA.[87]

Use of the average discount rate *decreased* OPEB cost by $221 thousand for the Test Year (NW Natural discount rate *lower than average*), also on a Total Company basis.

Q. What does Staff suggest regarding NW Natural's proposed OPEB costs?

A. Staff continues to investigate these costs and recently issued additional Staff Data Requests regarding NW Natural's OPEB and pension costs.

Q. Does this conclude your testimony?

A. Yes.

[87] See; e.g., the discussion of arc elasticity at https://www.investopedia.com/terms/a/arc-elasticity.asp (accessed by Staff on April 7, 2020).

CASE: UG 388
WITNESS: STEVE STORM

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 801

Witness Qualification Statement

April 17, 2020

WITNESS QUALIFICATION STATEMENT

NAME Steve Storm

EMPLOYER Public Utility Commission of Oregon

TITLE Senior Economist

ADDRESS 201 High Street SE, Suite 100
Salem, OR 97301

EDUCATION MBA; University of Oregon; Eugene, Oregon
AB (Economics); Harvard University; Cambridge, Massachusetts

EXPERIENCE I have been employed by the Public Utility Commission of Oregon since October 2018 as a Senior Economist. I was previously employed by the Commission as a Senior Economist 2007-2008, the Program Manager of the Economic and Policy Analysis section 2008-2012, and as an Economist 4 2012-2013. My responsibilities have included performing as well as leading a team of analysts performing economic and financial research and providing technical support on a wide range of policy issues involving electric, natural gas, and telecommunications utilities. I have testified before the Commission on policy and technical issues in multiple dockets.

I have over 35 years of professional experience performing and directing the performing of economic, financial, and other quantitative analysis.

I was employed by NW Natural as a Senior Economist in its IRP team 2013-2018, where my responsibilities included customer and industrial load forecasting; performing cost of service and related financial analysis on a variety of infrastructure projects and alternatives; and preparing quarterly economic information for executive communications.

I was a self-employed financial planner for eight years following an 18 year career in management positions responsible for pricing and cost analysis; financial analysis, planning and management; and strategic planning in the publishing and telecommunications industries. I managed the pricing and cost accounting functions for Pacific Northwest Bell's Directory department and its successor company, US WEST Direct, for five years. I managed the departmental budgeting and management reporting functions at US WEST Direct for three years and had seven years management experience in capital budgeting, financial analysis, and strategic planning functions at US WEST Communications. I managed the corporate financial planning, analysis, and management reporting functions for one year at Electric Lightwave.

CASE: UG 388
WITNESS: MING PENG

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 900

Direct Testimony

April 17, 2020

Q. Please state your name, occupation, and business address.

A. My name is Ming Peng. I am a Senior Economist employed in the Energy Finance and Audit Division of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE., Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. My witness qualification statement is found in Exhibit Staff/901.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to discuss my review of the depreciation expense and accumulated depreciation (depreciation reserve) portions of NW Natural (NW Natural, NWN, or Company) revenue requirement for this rate case, as documented by the Company witness Kyle Walker in NW Natural/1000. I also discuss my review of the Allowance for Funds Used During Construction (AFUDC) portion of revenue requirement for this rate case.

Q. Did you prepare an exhibit for this docket?

A. In addition to my direct testimony, I have prepared the following exhibits: Exhibit Staff/901, Witness Qualification Statement, and Exhibit Staff/902, NW Natural Response to Staff Data Request (DR) Nos. 126-128. Exhibit 902 contains analysis, responses to Staff data requests, and file links to internal and external references, in seven Excel working files that support Staff's recommendations.

Q. How is your testimony organized?

A. My testimony is organized as follows:

Issue 1. Analysis of Depreciation from a Ratemaking Perspective…..….3
Issue 2. Depreciation Effect on Revenue Requirement……..7
Issue 3. Regulatory Capitalization Policy……10
Issue 4. FERC AFUDC Requirements 12

ISSUE 1. ANALYSIS OF DEPRECIATION FROM A RATEMAKING PERSPECTIVE

Q. What is depreciation?

A. Depreciation is defined by the National Association of Regulatory Utility Commissioners (NARUC) in relevant part as follows:

> As applied to the depreciable plant of utilities, the term depreciation means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of utility plant in the course of service from causes that are known to be in current operation, against which the company is not protected by insurance, and the effect of which can be forecast with reasonable accuracy. Among the causes to be considered are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand, and the requirement of public authorities.[1]

The statement above defines depreciation from a valuation perspective. From an accounting perspective, depreciation is the allocation of the cost of fixed assets less net salvage to accounting periods, which is a capital recovery concept. From a ratemaking perspective, both the valuation (rate base) and accounting (capital recovery) concepts of deprecation are important.

Q. Do Oregon statutes address utility depreciation rates?

A. Yes. ORS 757.140(1), states in relevant part:

> Every public utility shall carry a proper and adequate depreciation account. The public utility commission shall ascertain and determine the proper and adequate rates of depreciation of the several classes of property of each public utility. The rates shall be such as will provide the amounts required over and above the expenses of maintenance, to

[1] NARUC, *Public Utility Depreciation Practices*, p.318 (1996).

> keep such property in a state of efficiency corresponding to the progress of the industry. Each public utility shall conform its depreciation accounts to the rates so ascertained and determined by the commission. The commission may make changes in such rates of depreciation from time to time as the commission may find to be necessary.

Q. How are utility property depreciation rates determined?

A. To develop depreciation rates, it is necessary to estimate (1) the combination of survivor curve-service life (Curve-Life) of utility property, and (2) net salvage (Gross Salvage – Cost of Removal) ratio. Depreciation rates are based on these two fundamental depreciation parameters and other required elements, such as asset value, asset remaining life, and depreciation method.

OAR 860-027-0350(2) requires that each energy utility must file a new depreciation study with the Commission no less frequently than once every five years. NW Natural filed its most recent depreciation study in 2017, which the Commission reviewed in Docket No. UM 1808. At the conclusion of that docket, the Commission issued Order No. 18-007 authorizing the Curve-Life and Net Salvage parameters for "each plant account" (FERC account), from which depreciation rates are derived for each account.

Q. What depreciation rates did NW Natural use in its Test Year revenue requirement?

A. NWN used the rates based on the depreciation study reviewed by the Commission in Order No. 18-007, and docketed in UM 1808.

Q. How did you analyze the Company's proposed depreciation expense and reserve, and what information did you review?

A. To confirm that the depreciation expense was properly calculated using the authorized depreciation parameters in Commission Order No. 18-007, Staff sent the Company Data Request No. 126 asking NWN to insert depreciation rate data links to its Excel depreciation work paper Attachment 1, to enable staff to verify such data as (1) gross plant and net plant, (2) capital additions, removals, transfers, and retirement, (3) depreciation rates, (4) depreciation expense, (5) depreciation reserve, and (6) Oregon Allocation Factors, all of which tie to the revenue requirement model to allow Staff to trace the data calculation from proposed data sources.[2]

Upon receiving the Company's responses, Staff verified the Company's calculations by reviewing:

(1) The calculation-Excel-files and checking the reference links, formulae, and calculations provided in these files;

(2) How the Company calculated Depreciation Expense by using the depreciation parameters authorized in Order 18-007;

(3) How the Company calculated the Depreciation Reserve adjustments; and

(4) How the depreciation expense and accumulated depreciation ties to the revenue requirement model and the rate base net plant.

The detailed review included the calculation links, formulas, references,

[2] See Staff/902.

notes, and term definitions in NWN's Excel Exhibit 1000, Work Paper 1 and 2, for the information below:

- Rate Base Net Plant
- Rate Case Depreciation Expense
- Land and Structures
- Gross Plant
- Capital Additions
- Rate Base Accumulated Depreciation
- Depreciation Rates in Order No. 18-007
- Asset Removals
- Asset Transfers
- Asset Retirements

Staff also conducted phone conferences on January 9 and January 20, 2020, with the Company's witness, Kyle Walker, and other analysts to gain a better understanding of NW Natural's depreciation filing.

Q. Did you make any adjustments in the Company's filing relating to depreciation expense and depreciation reserve?

A. No. Staff thoroughly reviewed the assumptions and forecasts and replicated the calculations. Staff found that NW Natural complied with the depreciation parameters that the Commission authorized in Order No. 18-007. Staff therefore made no adjustment on NWN's depreciation expenses and depreciation reserves.

ISSUE 2. DEPRECIATION EFFECT ON REVENUE REQUIREMENT

Q. Describe the depreciation effect on the revenue requirement of a utility.

A. In the traditional rate base rate-of-return environment, customer rates and utility costs are components of a utility's revenue requirement. NARUC, in its "Public Utility Depreciation Practices" manual on "Depreciation Expense and Its Effect on the Utility's Financial Performance – Revenue Requirement" states:

> Depreciation has a profound effect on the revenue requirement of a utility, and for many utilities, depreciation expense represents a large percentage of total operating expenses. In addition, deferred income taxes, rate base, and cost of capital are all affected by the depreciation practices of a utility.[3]

Q. What is the relationship between utility property depreciation and utility revenue requirement?

A. Under cost-of-service regulation, revenue requirement refers to the revenues the utility must earn to recover the cost of providing service and to earn a reasonable return on its investment. To compute the revenue requirement (RR) (RR is measured by cost-of-service), a basic formula is followed:[4]

RR = O&M Expense + "Depreciation" + Taxes + Return% x Rate Base

Rate Base = Gross Plant – "Accumulated Depreciation" – Accumulated Deferred Income Taxes + Working Capital

[3] NARUC, *Public Utility Depreciation Practices*, p.195 (1996).
[4] Federal Energy Regulatory Commission, *Cost-of-Service Rates Manual*, pp. 6-7 (1999), available online at: **www.ferc.gov**/industries/gas/gen-info/**cost-of-service-manual**.doc.

In this formula, Depreciation is one of the largest line items in the cost of service; therefore, Depreciation is important as both an annual expense and as a reduction of rate base.

Q. How are depreciation parameters used in determining the utility's revenue requirement?

A. In a general rate case filing, the depreciation expense is calculated by using the Commission's authorized depreciation parameters, which are derived from depreciation rates and traditional FERC classifications of generation, transmission, distribution, and general plant assets.

Accumulated depreciation is the cost of the investment in gross plant that is recovered through the cost-of-service as depreciation expense. Accordingly, the depreciation expense is accumulated and is subtracted from the gross plant to reduce the remaining investment to be recovered. The remaining balance is the net book plant. The net book plant represents the portion of gross plant that is not depreciated.

Q. How is depreciation expense calculated in revenue requirement?

A. Depreciation expense, in revenue requirement, is determined by three factors: (1) depreciation rates, (2) plant in service, and (3) Oregon cost allocation factor. Depreciation rates were determined in OPUC Order No. 18-007, UM 1808.

Q. Please explain if the depreciation expense adjustment in this testimony is final.

A. Assuming that no additional errors are present in the Company's filing, the given depreciation rates are authorized under the Order No. 18-007; if, however, any adjustments are made to Plant In Service and Cost Allocation Factor, the Oregon final depreciation expense and accumulated depreciation reserve would be changed accordingly. For detailed data information, please see Staff/902, Peng Depreciation work paper 1.

ISSUE 3. REGULATORY CAPITALIZATION POLICY

Q. What is AFUDC?

A. AFUDC is Allowance for Funds Used During Construction and is defined as the cost of money used during construction. AFUDC is capitalized as part of Plant in Service.

Q. What is FERC AFUDC Capitalization Policy?

A. On March 18, 2010, in FERC Docket No. AI11-1-000, Accounting Release Number 5 (AR-5) (Revised), FERC:

> revised its AFUDC accrual policy to allow natural gas pipeline companies to begin accruing AFUDC on construction projects when the following two conditions are met: (1) capital expenditures for the project have been incurred; and (2) activities that are necessary to get the construction project ready for its intended use are in progress (AFUDC policy conditions).

FERC also explained that "AFUDC capitalization shall continue as long as these two conditions are present."[5]

Q. Have you reviewed Northwest Natural's Capital Policy 83?

A. Yes. I reviewed Northwest Natural's Capital Policy 83, under the UG 388 Standard Data Response 80 Attachment 1 - Capital Asset Policy.

Q. Please describe if NWN complied with guidance regarding the capitalization of assets based on FERC's and the OPUC regulations in this filing.

A. In response of Staff Data Request Nos. 217-218, the Company provided detailed information about AFUDC, and its accounting practices related to AFUDC, contained in its Capital Asset Policy No. 83, effective October 6,

[5] FERC Docket No. A11-1-000, Accounting Release Number 5 (AR-5) (Revised) Enclosure, p. 1.

2016. On page 1, the policy states:

> This Policy outlines the Company's policy for budgeting, acquiring, and accounting for capital assets and provides guidance regarding the capitalization of assets based on the Federal Energy Regulatory Commission's (FERC) regulations and other related regulatory body guidelines (e.g. the Oregon Public Utilities Commission (OPUC) and Washington Utilities and Transportation Commission (WUTC).

Page 3 of the policy states:

> AFUDC is an allowance for interest and, if applicable, a return on equity to be capitalized on capital construction projects before they are put in service. AFUDC is a cost of capital rate that includes short term borrowing rates and, to the extent average annual construction work in progress costs exceed the average annual short-term borrowing amounts, long term borrowing rates and equity cost rates. The AFUDC debt and equity rates are calculated monthly using prescribed FERC calculations. Refer to FERC class of accounts in CFR Title 18 for more details.

Staff's Data Request No. 217 asked if the Company complied with FERC's Capitalization of AFUDC policy and meets two conditions of accruing AFUDC on construction projects. In the Company's data response, NWN stated that the Company has complied with FERC's Capitalization of AFUDC, and has met the two conditions of accruing AFUDC on all of its construction projects. NWN verified that: 1) AFUDC is only charged to the project when capital expenditures for the project have been incurred; and 2) activities that are necessary to get the construction project ready for its intended use are in progress.

ISSUE 4. FERC AFUDC REQUIREMENTS

Q. Please describe the FERC formulas for calculating AFUDC.

A. The FERC AFUDC rate formulas are set forth in Electric Plant Instruction 3(17) in FERC's Uniform System of Account Prescribed for Public Utilities and Licensees (18 C.F.R. Part 101). FERC has prescribed two formulas for calculating maximum allowable AFUDC rates. One formula determines the maximum rate that can be used to capitalize an allowance for borrowed funds (i.e., debt) used for construction purposes. The second formula determines the maximum rate that can be used to capitalize an allowance for other funds (e.g., common equity) used for construction purposes. The rates derived from each formula, added together, provide the total maximum allowable rate that can be used to capitalize AFUDC.

Q. Have you reviewed the Company calculation of its AFUDC rate?

A. Yes. I reviewed the company calculations of its AFUDC rates. I sent out Data Request Nos. 217-218 and asked the Company to explain in detail whether the Company's calculation of its AFUDC rates comply with the FERC AFUDC rate formulas and accounting requirements.

Q. How did you analyze the Company's proposed AFUDC rates, and what information did you review?

A. To confirm that the AFUDC rate was properly calculated using the authorized rate of return in (previous rate case UG 344) Commission Order No. 18-419 (effective November 1, 2018), Staff sent the Company Data Request Nos. 127

and 128 asking NWN to provide the detailed rate calculations to enable staff to verify the AFUDC rates based on such data as (1) the sources of funds, (2) the amount or balance of such funds, (3) the applicable cost rates for such funds, (4) Construction Work-in-Progress CWIP, and (5) the relative weight that should be given to those sources of funds in (6) the derivation of the AFUDC rates, to allow Staff to trace the data calculation from proposed data sources.[6] Upon receiving the Company's responses, Staff verified the Company's data by replicating the calculations based on the following information:

- CWIP Balance,
- Net AFUDC Base,
- Debt Rate,
- Equity Rate,
- Total AFUDC rate
- The calculations for AFUDC - Borrowed Funds (Ai), and
- The calculations for AFUDC - Other Funds (Ae)

Staff also conducted a phone conference on January 30, 2020, with the Company's witness, Kyle Walker, and other analysts to gain a better understanding of NW Natural's AFUDC filing.

Q. From your review, please describe how the Company's AFUDC rate calculations are conducted.

A. In response to Staff Data Request No. 217, the Company explains:

> NW Natural calculates the AFUDC entry using an automated program within the general ledger system that produces thousands of line items each month. AFUDC is applied to previous month's ending balance plus half of current month's Construction Work in Progress (CWIP) expenditures. Certain non-cash items are excluded from the AFUDC calculation. The methodology of the AFUDC forecast calculation complies with

[6] See Staff/902.

the FERC methodology for AFUDC by utilizing short-term debt rates until CWIP exceeds the short- term borrowing. The 2020 and 2021 attachments agree to the analysis produced in the long-term planning forecasting system.

Q. Do you think the Company's calculation of its AFUDC rates is in a manner consistent with FERC rules?

A. Yes. Staff reviewed Excel spreadsheet files with reference links and calculation formulas, and found that the Company's calculation of its AFUDC rates follow the FERC AFUDC rate formulas without deviation. The calculations assume that short-term debt is the first source of construction funding; to the extent, if construction funding requirements exceed the balance of short-term debt, it assumes the requirements are met proportionally from long-term debt, preferred stock (if any), and common equity.

Q. Has the OPUC conducted a financial audit of the company's AFUDC accounting practices? Did the OPUC audit include a review of the company's AFUDC accounting practices?

A. Yes. I reviewed the Staff audit report. Staff auditors examined the Company's AFUDC rate calculations in their 2017 audit report. That audit report says: "NW Natural's procedures regarding AFUDC generally follow FERC and standard accounting guidelines. No flags were raised in the current (2017) audit."

Q. Have you made adjustment to NWN's AFUDC rate?

A. No. Staff found that the historical data and forecasted data are based upon assumptions reflecting the operations and conditions that the company reasonably expected to be followed.

Table below shows that the Company's AFUDC policy and calculation are consistent with regulatory guidance.

Year	Total AFUDC %	OPUC Authorized Rate of Return	Order No.	Docket No.
2016	1.22%	7.778%	12-408	UG 221
2017	4.72%	7.778%	12-408	UG 221
2018	5.09%	7.317%	18-419	UG 344
2019	3.61%	7.317%	18-419	UG 344
2020	2.01%			UG 388
2021	2.03%			

For detailed data information please see Peng AFUDC work paper 2.

Q. Does this conclude your direct testimony?

A. Yes.

CASE: UG 388
WITNESS: MING PENG

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 901

Witness Qualifications Statement

April 17, 2020

WITNESS QUALIFICATIONS STATEMENT

NAME: Ming Peng (Ms.)

EMPLOYER: Public Utility Commission of Oregon

TITLE: Senior Economist
Energy Rates, Finance and Audit Division

ADDRESS: 201 High Street SE. Suite 100
Salem, OR. 97301

EDUCATION & TRAINING:

M.S. Applied Economics
University of Idaho, Moscow

B.S. Statistics
People's University of China, Beijing

CRRA Certified Rate of Return Analyst in 2002
Society of Utility and Regulatory Financial Analysts

Depreciation studies – the Society of
Depreciation Professionals

NARUC Annual Regulatory Studies Program
Michigan State University, East Lansing

350+ credit hours on 30+ topics trainings in public utility industry

EXPERIENCE: 1/11/1999 – Present, Public Utility Commission of Oregon

I have been employed by the Public Utility Commission of Oregon (Commission) for 21 years. My roles include:

Expert Witness, Case Manager, Economist, Policy Analyst, Econometrician, Utility Analyst, and Principal Analyst
I have testified in various formal state hearings and performed numerous analyses including economic, financial, statistical, mathematical, marketing, and policy analyses in public utility industry.

Principal Analyst & Case Manager, Settlement Lead / Negotiator for Depreciation Ratemaking:
I have served as a Principal Analyst and Case Manager for the determination of Energy Property Depreciation Rates (Oregon Revised Statute 757.140) for past 10 years. In this role, I had a strong focus on Depreciation Rate Determination (fixed cost allocation, and capital recovery). I was also a Principal Analyst and

Case Manager for the determination of Energy Property Depreciation Rates (Oregon Revised Statute 757.140) during this time period.

In this position, I investigated, analyzed and calculated energy asset retirement cost & impact and power plant decommissioning cost & impact on customer rates. I reviewed, calculated, analyzed fixed asset depreciation and propose depreciation parameters for each of FERC accounts on Generation, Transmission, Distribution, General, and Coal Mining Plants. The energy sources I have worked on are Steam/Coal, Hydraulic, Natural Gas, Wind, Solar, and Geothermal.

My analyses of "Power-Plant-Shutdown" activities (accelerated plant retirement, and decommissioning cost recovery) include the following cases:

1. PGE closes Boardman Coal-fired plant (UM 1679 & UE 215).
2. PacifiCorp closes Carbon Coal Plant in Utah (UE 246).
3. Multi-state PacifiCorp Klamath Hydro Dam Removal Cost recovery for (1) J. C. Boyle Dam, (2) Copco 1 Dam, (3) Copco 2 Dam, and (4) Iron Gate Dam removal under the ORS 757.734 – Recovery of investment in Klamath River dams in OPUC UE 219.
4. Idaho Power Valmy Coal-fired power plant Shutdown (UE 316).
5. PGE Colstrip Coal-fired power plant Shutdown (UM 1809).

I conduct case investigation and analysis on Utility's filings, make rate adjustments, lead settlement negotiation, prepare testimony, and appear on behalf of the Commission. The energy companies I work with are: (1) PacifiCorp (serves 6 states), (2) PGE, (3) Northwest Natural Gas (NWN), (4) Idaho Power, (5) Avista Corp (Washington), and (6) Cascade Gas (CNG, Montana).

Lead Analyst and Case Manager on Financial Dockets:

Prior to my current position, I was a lead Analyst and Case Manager for cost of debt capital for nine years. I reviewed market risks, derivatives and hedging, debt issuance, and stock flotation. My analysis directly informed utility and energy policy.

I advised the Commission on over 60 financial dockets. The Commission incorporated all of my recommendations into final orders.

I was certified by the Society of Utility and Regulatory Financial Analysts, as a Certified Rate of Return Analyst in 2002.

Public Utility & Policy Analyst:

Rulemaking: I have formulated energy regulation rules for utility performance incentives and cost-of-service regulation.

Energy Utility Merger & Acquisition: I have testified in formal state hearings involving utility mergers & acquisitions. I conducted Acquisition

Premiums & Credit Risk Analysis and testified on behalf of the Commission in MidAmerican Energy Company's application to purchase PacifiCorp. I also reviewed Scottish Power's earlier purchase of PacifiCorp, and PGE's emergence from Enron after the Enron bankruptcy.

Integrated Resource Planning (IRP, Least Cost Planning): I provided comments on B2H, a 500-kV transmission power line to the Commission for the decision-making that including cost and benefit list, pros and cons list, alternatives, and the legal risks. As well as comments on utility's IRPs, such as total cost for power generation, power capacity (MW) replacement cost, avoided cost for free fuel, and emission trading cost.

Clean Energy – Dollar Impact on Customer Rates: I have analyzed and calculated the rate impact and comparative advantage of clean energy. I built the portfolio optimization models to analyze the coal-fired generating capacity replacement.

General Rate Cases: I participate in almost all UE, UG rate cases since began working for OPUC. Historically, my review included fuel prices forecasting, property sales, load forecasting, weather normalizations, cost of debt, and capital structures. Currently, my reviews are focused on depreciation and reserve, AFUDC Capitalization Policy.

Survey Sampling Design: Results of my statistical sampling design and sampling procedures are incorporated into my revenue requirement testimony in Commission Docket No. UM 1288.

Auditing, Interest Rate, Late Payment: I audited cost of capital and financial components. My survey report and analyses are published annually for Oregon (UM 779).

Survey for Market Competition & Economic Policy: I conducted and wrote the report on Telecommunications "Market Competition and Economic Policy Survey Analysis" for House Bill 2577. This report has been published on the OPUC web annually for 15 years.

Mentor in the ICER - International Confederation of Energy Regulators

I was selected to act as a mentor in the ICER (International Confederation of Energy Regulators) Women in Energy (ICER WIE) pilot mentoring program. My "Mentoring Topics" focus on Incentive Regulation; Rate and Economic Impacts of "Cost-of-Service" regulation in the U.S. and "Price-Cap Performance Based Regulation" in Europe; Cost of Capital, Energy Demand and Price Forecasting Modeling; Least Cost Planning; and Regulatory Policy, and Renewable Energy issues within regulated rate structures.

CASE: UG 388
WITNESS: MING PENG

PUBLIC UTILITY COMMISSION
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STAFF EXHIBIT 902

Exhibits in Support
Of Opening Testimony

April 17, 2020

Exhibit 902 PENG UG 388 NWN Data Responses

NW Natural

Rates & Regulatory Affairs
UG 388
2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 126

126. Please provide the calculation (1) links, (2) formulas, (3) references, (4) notes, and (5) term definitions to your Excel Exhibit 1000, work paper WP1 and WP2. Your response should enable Staff to verify such data as (1) Plant Balance, (2) Depreciation Rates, (3) Depreciation Expense, (4) Depreciation Reserve, (5) Oregon Allocation Factors, including all ties to the Revenue Requirement Model, and Gross Plant, Accumulated Depreciation and Depreciation Expense. The authorized depreciation rate is addressed under Commission Order No. 18-007 that was issued and effective on January 5, 2018 in Docket No. UM 1808.

Response:

Please see "UG 388 OPUC DR 126 Attachment 1 - CONFIDENTIAL". The attached work paper is the same work paper submitted as "UG 388 – Exh. 1000 – WP2 -Gross Plant, Accum Deprec and Deprec Exp – CONFIDENTIAL.xlsx" with one tab added. The added tab, "Exhibit A – UM 1808," is a copy and paste of Exhibit A (Depreciation Study) of the Stipulation adopted by the Commission in Order No. 18-007 (Appendix A, pages 9-13 of 13) of UM 1808, the Company's latest depreciation study docket. This tab was added to allow Staff to easily verify that the correct depreciation rates are used in the revenue requirement of UG 388. The net plant and depreciation expense totals are the exact same as in the original work paper, as the depreciation expense rates are the same. An explanation of each tab in the attached work paper is provided below:

- Rate Base Net Plant – This tab lays out gross plant and accumulated depreciation (also referred to as 'reserve') for Oregon and Washington per FERC account for the Base Year and the Test Year. As the sheet moves down it consolidates FERC accounts into appropriate plant accounts (Intangible – Software, Intangible – Other, Production, etc.) for Oregon and Washington. It uses allocation factors associated with each plant account to allocate correctly between states. Next it organizes gross plant and accumulated depreciation ('reserve') for system Base Year, system Test Year, Oregon Base Year, and Oregon Test Year. Last it summarizes the data into Base Year and Test Year amounts for 'Utility Plant in Service,' 'Accumulated Depreciation,' and 'Net Utility

Plant.' **Cells C324:G329 are input into WP 1 tab "Exhibit 1012 – Rate Base & Dep' cells D9:H15.**

- Rate Case Dep Exp – Utilizing a similar layout as compared to the "Rate Base Net Plant" tab, this tab applies to Depreciation Expense. Input amounts for this tab are from the "Expense" tab. It summarizes Base Year and Test Year for Intangible – Software, Transmission, Distribution, General, and Storage and Storage Transmission. **Cells C290:G298 are input into WP 1 tab 'Exhibit 1012 – Rate Base & Dep' cells D33:H44.**
- Land and Structures – The "Land & Structures" tab allocates historical balances based on an allocation between Oregon and Washington. It then takes those allocated balances and adds forecasted growth from the "Gross Plant" tab. Land and structures balances are included in the "Rate Base Net Plant" tab.
- Gross Plant – Plant FERC accounts for Oregon and Washington. Actual data from December 2018 – September 2019. Forecasted data from October 2019 – December 2021 are calculated by taking prior months amounts adding additions, subtracting retirements, and adding transfers related to gross plant.
- Transfers – Gross – Forecasted data provided from finance team for October 2019 – December 2021 per FERC account for Oregon and Washington. Transfers refer to adjustments related to Mist recall. We do not have any predicted Mist recall transfers and, therefore, there are no current forecasts for this tab.
- Additions – Forecasted data provided from finance team for October 2019 – December 2021 per FERC accounts for Oregon and Washington. Additions are plant assets planned to come into service.
- Net Plant – This tab takes gross plant and subtracts accumulated depreciation from September 2019 – December 2021 per FERC account for Oregon and Washington. The purpose of this tab is to test for negative net plant which means there would be no depreciation expense for that FERC account.
- Accum Deprec – Plant reserve accounts per FERC from Oregon and Washington. Actual data from December 2018 – September 2019. Forecast data from October 2019 – December 2021 are calculated by taking prior months amounts adding expense, subtracting removals, and subtracting retirements, and adding transfers related to accumulated depreciation.
- Deprec Rates – Depreciation rates from UM 1808 applied to FERC accounts.
- Exhibit A – UM 1808 – UM 1808 settlement results, adopted by the Commission in Order No. 18-007.
- Expense – Actual data from December 2018 – September 2019 per FERC account from Oregon and Washington. Forecasted monthly data from October 2019 – December 2021 are calculated by taking the average gross plant associated with that FERC account, multiplying it by the appropriate depreciation rate and dividing it by 12 months. If the net plant associated with that FERC account is less than 0, the expense will also be 0. Shared assets have not been allocated between Oregon and Washington on this tab. Please refer to "Rate Case Dep Exp" tab for fully allocated depreciation expense.

- Removals - Forecasted data provided from finance team for October 2019 – December 2021 per FERC account for Oregon and Washington. Removals are the expenses associated with removing assets from our system.
- Transfers – Accum - Forecasted data provided from finance team for October 2019 – December 2021 per FERC account for Oregon and Washington. Transfers refer to adjustments related to Mist recall. We do not have any predicted Mist recall transfers and, therefore, there are no current forecasts for this tab.
- Retirements - Forecasted data provided from finance team for October 2019 – December 2021 per FERC account for Oregon and Washington. Retirements are plant assets planned to come out of service.

NW Natural

Rates & Regulatory Affairs
UG 388
2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 127

127. For AFUDC Accounting (Allowance for Funds Used During Construction-AFUDC, Construction Work-in-Progress-CWIP), please fill out the attached computational table DR 127 Attachment A with calculation formulas for years from 2016 to 2021 individually. The tables should identify (1) the sources of funds, (2) the amount or balance of such funds, (3) the applicable cost rates for such funds, (4) Construction Work-in-Progress CWIP, and (5) the relative weight that should be given to those sources of funds in (6) the derivation of the AFUDC rates.

Response:

Please see the UG 388 OPUC DR 127 Attachment 1. We have updated the values where appropriate. The AFUDC calculation as provided by Staff does not match how the Company calculates AFUDC. We have made modifications to tabs 2020 and 2021 to agree with the forward-looking calculation methodology.

The derivation of the AFUDC rates are provided by month in UG 388 OPUC DR 127 Attachment 2.

NW Natural calculates the AFUDC entry using an automated program within the general ledger system that produces thousands of line items each month. AFUDC is applied to previous month's ending balance plus half of current month's Construction Work in Progress (CWIP) expenditures. Certain non-cash items are excluded from the AFUDC calculation.

The forecast periods are calculated in the long-term planning forecast system, UI Planner. The methodology of the AFUDC forecast calculation complies with the FERC methodology for AFUDC by utilizing short-term debt rates until CWIP exceeds the short-term borrowing. UG 388 OPUC DR 127 Attachments 3 and 4 are the summary outputs for the years 2020 and 2021 input into an annual FERC AFUDC spreadsheet format. The 2020 and 2021 attachments agree to the analysis produced in the long-term planning forecasting system.

NW Natural

Rates & Regulatory Affairs
UG 388
2020 OR General Rate Revision
Data Request Response

Request No.: UG 388 OPUC DR 128

128. Please explains in detail whether the Company's calculations of its AFUDC rates comply with the FERC AFUDC rate formulas and accounting requirements.
The explanation should include the following details:
(1) Under FERC AFUDC Accounting, the formulas assume that short-term debt is the first source of construction funding. If the balance of "short-term debt exceeds the average balance of CWIP," the total AFUDC rate is comprised of only an allowance for borrowed funds used during construction equal to the short-term debt rate. Were these the assumptions you based the calculations on?
(2) If the average balance of "CWIP exceeds the balance of short-term debt", the calculation assumes that the construction funding was not met by short term debt. How did the Company incorporate the different capital sources and cost rates to arrive at the total debt and other funds maximum allowable AFUDC rates? Please elaborate.

Response:

The Company's calculations of its AFUDC rates comply with the FERC AFUDC rate formulas and accounting requirements.

(1) Yes, these were the assumptions upon which the Company based its calculations. Under FERC AFUDC Accounting, the formulas assume that short-term debt is the first source of construction funding. If the balance of "short-term debt exceeds the average balance of CWIP," the total AFUDC rate is comprised of only an allowance for borrowed funds used during construction equal to the short-term debt rate. This was the case for the Company for the entire year of 2016.
(2) If the average balance of "CWIP exceeds the balance of short-term debt", the calculation assumes that the construction funding is not met by short term debt. The Company incorporates the different capital sources and cost rates to arrive at the total debt and other funds maximum allowable AFUDC rates by using a weighted average of the long-term debt and equity components of the capital structure as prescribed by FERC accounting.

Please refer to the Company's response to UG 388 OPUC DR 127 for the detailed historical and prospective rate calculations.

CASE: UG 388
WITNESS: SCOTT GIBBENS

PUBLIC UTILITY COMMISSION
OF
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STAFF EXHIBIT 1000

Opening Testimony

April 17, 2020

Q. Please state your name, occupation, and business address.

A. My name is Scott Gibbens. I am a Senior Economist employed in the Energy Rates, Finance and Audit Division of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE, Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. My witness qualification statement is found in Exhibit Staff/1001.

Q. What is the purpose of your testimony?

A. In this testimony, I discuss Staff's position on Northwest Natural's (NWN) proposed load forecast for the test year. I also discuss the Company's proposed changes to its partial decoupling mechanism.

Q. Did you prepare an exhibit for this docket?

A. Yes. I prepared the following exhibits:

- Staff/1002: Comparison of NWN model to full data set
- Staff/1003: Staff's Model with all monthly dummy's included
- Staff/1004: Analysis of city specific UPC for variance and mean.

Q. How is your testimony organized?

A. My testimony is organized as follows:

Issue 1. Load Forecast 2
Issue 2. WARM and Partial Decoupling Mechanisms 15

ISSUE 1. LOAD FORECAST

Q. Please summarize Staff's recommended adjustments to the Company's load forecast methodology.

A. As Staff will discuss in its following testimony, Staff recommends the following adjustments:

1. Review UPC models for stationarity in future instances.
2. Utilize a more robust model selection process.
3. Use monthly indicator variables (dummy variables) instead of a dummy for only summer months.
4. Do not limit the historical data to after August 2013.
5. Separate forecasts by geographic region.

Q. Please summarize the Company's load forecasting methodology.

A. The Company separately forecasts each customer class. Northwest Natural utilizes Autoregressive Integrated Moving Average (ARIMA) models as a main component for many of its load forecast models. Like many other utilities, Northwest Natural breaks down its forecast into two components of load that are forecasted separately: use-per-customer (UPC) and number of customers – where these components can be multiplied to obtain the load. Economic, demographic, and weather variables are used as forecast drivers in the models.

Q. Does Staff support the use of an ARIMA model for forecasting load?

A. Yes. ARIMA models are used by all Oregon regulated utilities. Some switched to ARIMA models following recommendations by Staff. ARIMA models work well for forecasting natural gas usage because of their ability to

model data with trends. This is because the model can be made to handle non-stationarity through differencing.

Q. What is non-stationarity and how does differencing solve the issue?

A. Non-stationarity can be a number of things, but in general it means that the predicted variable does not have constant statistical properties over time. For example, in variables that increase over time, such as population, the average value would not remain constant. Regression models attempt to identify constant relationships between variables in order to predict future values; if the relationship of two variables does not remain constant because of a trend, then the result of the regression could be spurious. “Differencing” is one of the simplest ways to deal with this issue, i.e., a non-stationary series. Instead of estimating the gross level of the variable of interest, differencing looks at the change from year to year. If the change from year to year is not stationary, then another difference is taken and the forecast looks at that resulting change in the change from year to year. A crude analogy would be trying to predict a car’s progress in a trip as being a non-differenced regression. If the car is moving, the first “difference” would be to use the speed of a car to parse where a car is in its trip at a particular time. If the car is not moving at a constant speed, the second difference would look at how fast the car is accelerating to then solve how fast the car is moving and then solve where it is. This process of differentiating is repeated until stationarity is achieved. The number of differences (d) required to

achieve stationarity is denoted as the "I" (Integrated) part of the ARIMA model.

Q. Has the Company ensured that their data is stationary?

A. No. Northwest Natural did not elect to difference any of its models. Staff performed an Augmented Dickey-Fuller (ADF) test of the Company's main variable of interest for its UPC model and found evidence of non-stationarity. Below are the results of Staff's test. By comparing the ADF test statistic to the "Test critical values," it is apparent that we cannot reject the null hypothesis that the variable has a unit root.

Table 1

Null Hypothesis: THERMDAY has a unit root
Exogenous: Constant
Lag Length: 10 (Automatic - based on AIC, maxlag=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.530069	0.5133
Test critical values:	1% level	-3.516676	
	5% level	-2.899115	
	10% level	-2.586866	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(THERMDAY)
Method: Least Squares
Date: 03/26/20 Time: 13:51
Sample (adjusted): 2012M12 2019M05
Included observations: 78 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
THERMDAY(-1)	-0.347898	0.227374	-1.530069	0.1308
D(THERMDAY(-1))	0.035508	0.219447	0.161805	0.8720
D(THERMDAY(-2))	-0.106944	0.208258	-0.513518	0.6093
D(THERMDAY(-3))	-0.239592	0.187525	-1.277658	0.2058
D(THERMDAY(-4))	-0.167990	0.173215	-0.969835	0.3357
D(THERMDAY(-5))	-0.326084	0.158121	-2.062246	0.0431
D(THERMDAY(-6))	-0.255359	0.141780	-1.801094	0.0763
D(THERMDAY(-7))	-0.304576	0.132679	-2.295591	0.0249
D(THERMDAY(-8))	-0.424730	0.115240	-3.685613	0.0005

D(THERMDAY(-9))	-0.291872	0.113535	-2.570774	0.0124
D(THERMDAY(-10))	-0.522142	0.112212	-4.653170	0.0000
C	0.521430	0.344672	1.512832	0.1351

R-squared	0.797424	Mean dependent var	-0.003711
Adjusted R-squared	0.763661	S.D. dependent var	0.529628
S.E. of regression	0.257477	Akaike info criterion	0.264867
Sum squared resid	4.375435	Schwarz criterion	0.627437
Log likelihood	1.670206	Hannan-Quinn criter.	0.410010
F-statistic	23.61852	Durbin-Watson stat	2.121460
Prob(F-statistic)	0.000000		

Q. Does Staff recommend differencing the data for the load forecast?

A. Not for the load forecast used in this rate case. Staff reviewed the resulting forecast of the Company's methodology and the forecast of a stationary model and found only slight differences in the output. For future forecasts, particularly ones with longer forecast horizons like in an IRP, Staff recommends that at a minimum, the Company ensure the validity of its model results by comparing them to a stationary model. However, due to ease of interpretation of the results, Staff is supportive of using a non-differenced model in this rate case.

Further, Staff notes that the UPC forecast, apart from determining load in this case, is also used as a direct input in the WARM and Partial Decoupling mechanisms currently approved by the Commission. Staff's conclusion that differencing is not necessary for the load forecast in this case helps provide for a relatively straightforward interpretation of the model results.

Q. What are the Autoregressive and Moving Average parts of an ARIMA model?

A. These two parts define how much information from previous years is significant in the estimation of the current year. The Autoregressive portion (p) is the number of previous years or lags, of the estimated variable that are included. So, if last month's value was indicative of this month's value, but the value from two months ago was not, then the AR portion of the model would include a single lag.

The moving average portion (q) defines the number of lags of the error term. This error term represents the unexplainable noise in the variable, or the difference between the predicted and actual amount. All three variables, p, d, and q are chosen during the model selection process. Many different metrics can be used to identify the optimal number of lags and differences. Northwest Natural utilizes the Durbin-Watson statistic (a measure of the autocorrelation in the model) as well as the mean squared error to determine the appropriate number of lags in the model.

Q. What is Staff's opinion of the Company's process for model selection?

A. Staff recommends a slightly different process. First, Staff recommends the use of a different metric like the Akaike Information Criterion (AIC) or Bayesian information criterion (BIC or SIC), which considers both goodness-of-fit and simplicity in the model selection process. Many statistical programs include an automated optimizer that will quickly iterate through many different model specifications to maximize the goodness of fit while still considering parsimony. The Company currently utilizes the program Stata to perform its load forecasting and could use the built-in command

"varsoc" to find the AIC optimized number of lags. Staff recommends the result as a starting point, by which simpler models can be compared based on relative difference in AIC, Durbin-Watson, Mean Absolute Percentage Error (MAPE), and inverted root values to select the appropriate model.

Q. Describe the Company's primary forecast driver for residential UPC?

A. Northwest Natural uses weather as the primary forecast driver for UPC. The weather is broken down into heating degree days (HDD) by month for each of the major population centers in Northwest Natural's service territory: Albany, Astoria, Coos Bay, The Dalles, Eugene, Lincoln City, Portland, and Salem. The Company uses the most recent 25 years of weather data from each city to normalize the weather going forward.

Q. Please summarize the Company's load forecasting results.

A. The Company has forecast a total of roughly 1.09 billion therms in the test year filed in the Company's opening testimony. Of the 1.09 billion therms, 721 million is from sales volumes, while the rest is made up of transportation volumes. Residential demand accounts for 36 percent of the total and roughly 55 percent of the Company's sales volumes. Commercial makes up roughly 22 percent of the total therms and nearly all of the rest (33 percent) of the sales volumes.

Q. Does Staff have recommended changes to the Company's approach for customer forecasts?

A. Yes, as noted earlier, Staff has a few suggested changes to improve the Company's forecast. Overall, Staff finds the Company's methodology and

resulting forecast to be largely consistent with industry best practices and previous Staff recommendations. Staff particularly thought that the Company's workpapers were very well organized and explanatory. However, Staff believes that a few improvements could be made in addition to those already discussed. Staff's first recommendation concerns the concatenation of the historical data utilized in the model. The second concerns the use of a dummy variable for summer months (July-September). Staff's third recommendation is to perform the UPC forecast by geographic location.

Q. Please describe the recommendation not to shorten the historical data.

A. The company states that it collected and matched data from September 2013-May 2019 for purposes of modeling UPC. However, the Company's workpapers show that the Company has matched UPC data to weather going back to January 2012. Staff can find no reason within the data to exclude this historical data. As shown in the two figures below, inclusion of the additional data provides a statistically superior forecast even when using the exact same regressors. Exhibit Staff/1002 includes the full regression output for each model.

Table 2

Sample	AIC[1]	MAPE[1]
2013M09-2019M05	-2.454352	4.16
2012M01-2019M05	-2.586936	4.09

[1] AIC and MAPE are both optimized through minimization, meaning the lower the better.

Q. Please describe Staff's recommendation to adjust the summer month dummy variable.

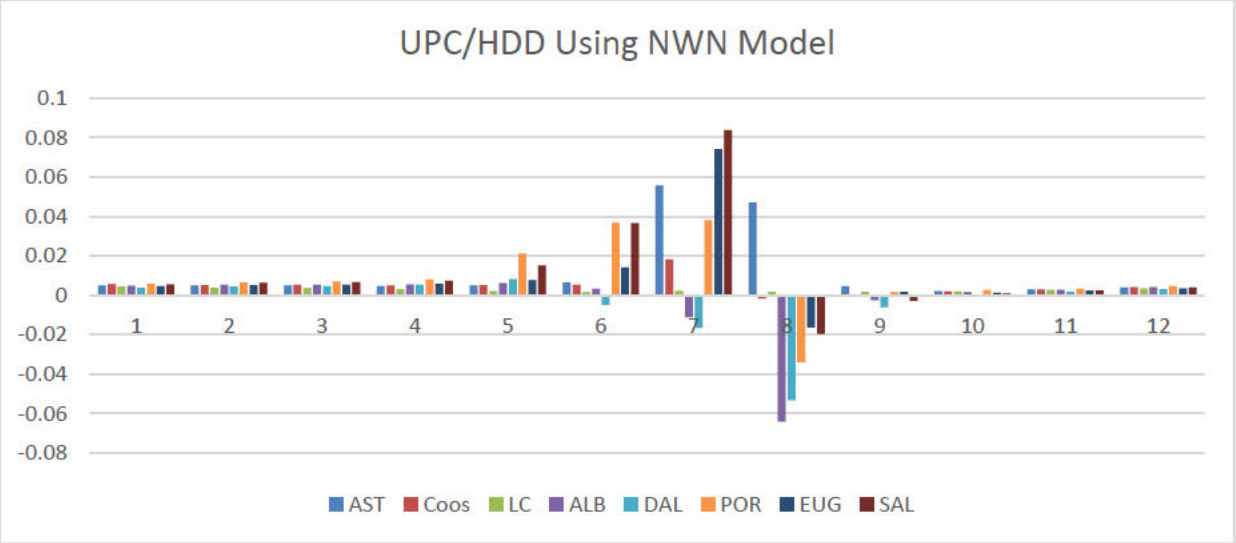
A. The Company's UPC model accounts for weather, the main driver of natural gas demand, through a monthly average HDD variable. The Company also includes a summer month dummy variable, theorizing that the summer baseload demand is lower than the rest of the year. In response to Staff discovery, the Company summarily stated that the summer month dummy was statistically significant in nearly all models unlike monthly dummy variables. They also theorize that water heaters in a garage or other uninsulated locations, as well as some customer's habit of extinguishing pilot lights may be the source of the difference in baseload. Staff is concerned with the relative lack of a theoretical argument regarding the basis for the inclusion of summer vs winter baseload demand. A non-insulated water heater would likely be accounted for in the HDD input, and the incremental demand from pilot lights is insufficient to account for the differences of the coefficients of the variable in the output of the regression.

Staff believes the reason the summer month variable is found to be significant is more likely to be due to the fact that the HDD variable is an average for a particular month. As a result, some of the weather-related impacts are lost through averaging and instead picked up by the dummy. In review of different model specifications, Staff found that models utilizing monthly dummy variables overall exhibited lower AIC's and MAPE's. Which months were significant relied largely on the omitted dummy (omitted to

avoid the dummy variable trap),[2] and its relative similarity to other months. When dropping the constant, so that each month's dummy became the presumed baseload for that month, all monthly dummy variables then became significant.[3] To explain further, if omitting a summer month, other summer months were largely less significant. However, omitting a winter month would lead to the opposite effect. Due to the deficiencies in the weather-related variable, Staff believes a more robust approach is appropriate. To illustrate this, Staff reviewed the relationship between HDD and UPC by month for Jan 2012 – May 2019, after removing the Company-calculated baseload. Northwest Natural's model assumes that once accounting for differences in Summer/Normal baseload, the relationship between HDD and UPC should be constant for all months and all geographic regions.

[2] In any ARIMA or similarly calculated regression, a single explanatory variable cannot be an arithmetic combination of other explanatory variables. If you include all monthly dummy's and a constant, the monthly dummy's sum to equal the constant for every observation in the dataset. One must be dropped in order to calculate the coefficients.
[3] See Exhibit Staff/1003.

Figure 1



The figure shows that while January through April are roughly consistent, the Company's model fails to account for differences in usage in the majority of the rest of the year. Further, July, August, and September are all very different, so the use of a single variable to categorize them all is insufficient. Staff acknowledges that HDD's are sparser during summer months, which makes the UPC/HDD metric more sporadic; however, the Company's baseload adjustment clearly has different effects on July, August, and September. Further this metric is visually showing the relationship that the rest of the Company's model is attempting to quantify. As evidence of this fact, Staff ran a model that created separate heating coefficients for each month. The results were that the summer months had heating coefficients three to four times larger than the average, but that lacked statistical significance. The sample size of HDD's in summer months was simply too small to create a meaningful coefficient.

If the sole purpose of the load forecast were to accurately forecast UPC in the test year, Staff's recommendation would be to include monthly dummy variables in each of the models and omit the constant. However, in order to maintain the one to one relationship between the UPC forecast and the calculated heating and baseload coefficients, Staff recommends the use of a dummy variable that groups the WARM months together and separate dummy variables for the remaining months. The baseload coefficient for the WARM months will be present and the overall model quality will be increased.

Figure 2

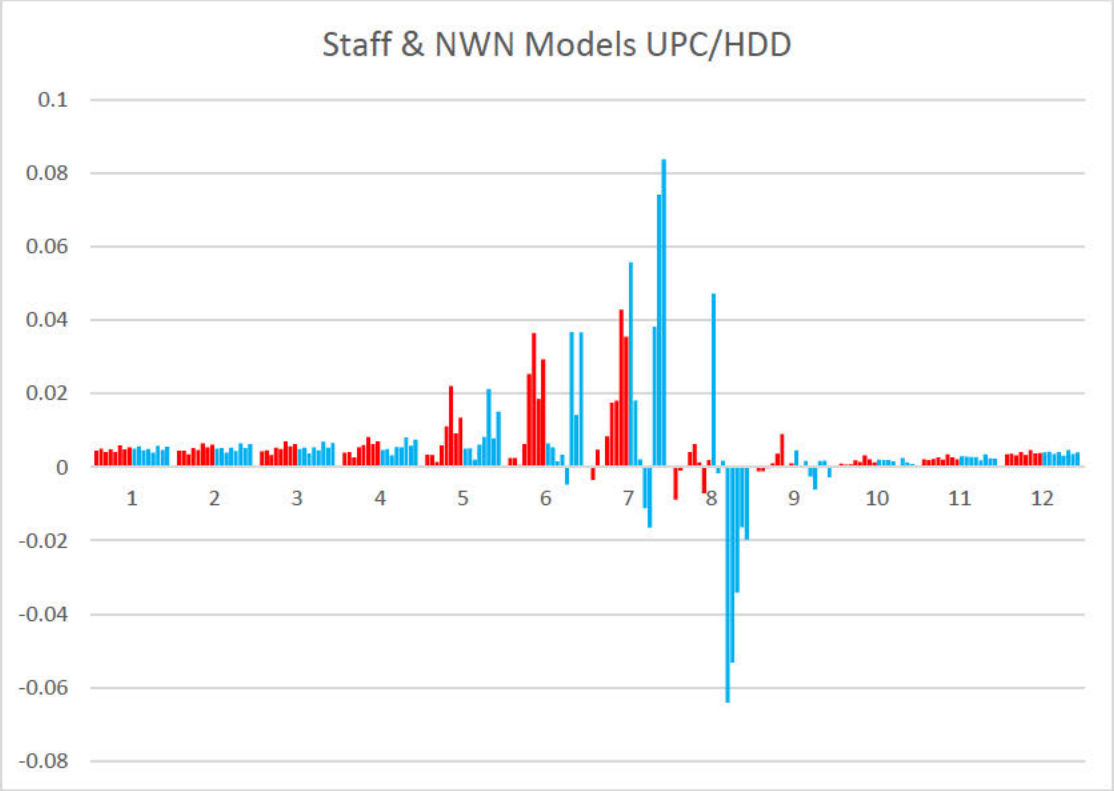


Figure 2 shows the difference between Staff's approach and NWN's on the monthly UPC/HDD metric. The red in the chart is Staff's model, while the

blue is NWN's. While anomalous results still exist, they are smaller in scale and August is vastly improved.

Q. Please explains Staff's final recommendation to utilize separate models for each geographic region.

A. The Company's methodology assumes that all customers in its Oregon service territory have the same response to weather and the same baseload heating needs. However, economic differences, wind chill variances, the variability of weather in a single day, the age and structural quality of each premise, and many other factors could result in differences between customers by region. A general best practice in modeling is to model at the finest degree possible, given your data limitations. Ideally, as noted earlier, the HDD variable would be daily, in order to better account for each customer's response to weather. However, the Company only has historical usage based on monthly billing information. This results in the need to aggregate HDD's into a monthly average and use a monthly model. However, the Company does have usage and weather based on geographic location. Staff has performed the geographic modeling for the residential UPC forecast but has yet to quantify the impact for the Commercial model.

Q. How did Staff analyze the concern?

A. Staff started by performing several different statistical tests on the usage and weather of the eight population centers. Using t-tests, f-tests, and ANOVA tests (Analysis of Variance) to identify if the customer usage data could presumably have come from the same population (meaning they are

statistically the same). Staff found that under 20 percent of cities could be presumed to have the same mean as another city, and roughly 40 percent of cities could be presumed to have the same variance for UPC data as another city.[4] This resulted in only three of the 28 possible city pairs having the same mean and variance. More generally, this can be interpreted to mean that for the most part customer's in city A are not like the customer's in city B.

Q. What are the results of Staff's modeling?

A. Staff's model results in a decrease to estimated UPC by roughly 7.4 annual UPC, from 638.5 to 631.1, with the WARM baseload coefficient moving from 0.5582 to 0.5484 and the heating coefficient moving from 0.1632 to 0.1463.[5] This results in a decrease to the Company's residential sales load of approximately 4.6 million therms.

[4] See Exhibit Staff/1004.
[5] This includes DSM impacts.

ISSUE 2. WARM AND PARTIAL DECOUPLING MECHANISMS

Q. Please summarize the Company's proposed change to this mechanism.

A. Northwest Natural proposed one change to its partial decoupling mechanism. In the month of April, they request that the weather adjustment within the partial decoupling mechanism use the WARM mechanism's calculated therms as the weather adjustment. In the Company's view, this will alleviate the "decoupling gap" where certain usage that occurs in April is not billed until after May 15th. When this occurs, the current methodology does not account for the fact that these therms are not covered by the WARM mechanism and is not decoupled from weather. This gap originally existed in the months of November and May but was corrected in 2006 and 2012 respectively, using the same methodology as the Company proposes for April in this filing.

Q. Does Staff have any concerns with this proposed adjustment?

A. No. In analyzing the proposed change, Staff found that the adjustment was warranted. Staff recommends the Commission approve the Company's proposed change to the partial decoupling mechanism.

Q. Does Staff have any other concerns with the WARM or Decoupling Mechanisms?

A. Yes. Staff believes that the heating and baseload coefficients used in calculating the monthly adjustments should include the DSM modeled adjustment. If the goal of the mechanisms is to ensure the proper recovery of prudently incurred fixed costs, the mechanisms should use the actual

coefficients which are used to calculate the demand. Using the non-DSM adjusted numbers results in a mismatch from the recovery of fixed costs, as the rates set in the rate case are higher due to the DSM adjustment, but the mechanism is in effect truing up to coefficients that would produce in general lower rates. This causes the mechanism to over-value the impact of HDD's and baseload demand on the Company's revenue requirement.

Q. Does this conclude your testimony?

A. Yes.

CASE: UG 388
WITNESS: SCOTT GIBBENS

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STAFF EXHIBIT 1001

Witness Qualifications Statement

APRIL 17, 2020

WITNESS QUALIFICATION STATEMENT

NAME: Scott Gibbens

EMPLOYER: Public Utility Commission of Oregon

TITLE: Senior Economist
Energy Rates, Finance and Audit

ADDRESS: 201 High St. SE Ste. 100
Salem, OR 97301-3612

EDUCATION: Bachelor of Science, Economics, University of Oregon
Masters of Science, Economics, University of Oregon

EXPERIENCE: I have been employed at the Oregon Public Utility Commission (Commission) since August of 2015. My current responsibilities include analysis and technical support for electric power cost recovery proceedings with a focus in model evaluation. I also handle analysis and decision making of affiliated interest and property sale filings, rate spread and rate design, as well as operational auditing and evaluation. Prior to working for the OPUC I was the operations director at Bracket LLC. My responsibilities at Bracket included quarterly financial analysis, product pricing, cost study analysis, and production streamlining. Previous to working for Bracket, I was a manager for US Bank in San Francisco where my responsibilities included coaching and team leadership, branch sales and campaign oversight, and customer experience management.

CASE: UG 388
WITNESS: SCOTT GIBBENS

PUBLIC UTILITY COMMISSION
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STAFF EXHIBIT 1002

Exhibits in Support
Of Opening Testimony

April 17, 2020

NWN Model

Dependent Variable: THERMDAY
Method: ARMA Maximum Likelihood (OPG - BHHH)
Date: 03/25/20 Time: 21:40
Sample: 2013M09 2019M05
Included observations: 69
Convergence achieved after 22 iterations
Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.557966	0.031223	17.87056	0.0000
HDDDAY	0.163197	0.001884	86.60603	0.0000
SUMMERMONTH	-0.097927	0.041231	-2.375074	0.0206
AR(1)	0.465985	0.104253	4.469761	0.0000
SIGMASQ	0.004336	0.000705	6.148734	0.0000

R-squared	0.996827	Mean dependent var	1.722904
Adjusted R-squared	0.996628	S.D. dependent var	1.177517
S.E. of regression	0.068376	Akaike info criterion	-2.454352
Sum squared resid	0.299213	Schwarz criterion	-2.292460
Log likelihood	89.67514	Hannan-Quinn criter.	-2.390124
F-statistic	5025.763	Durbin-Watson stat	1.888123
Prob(F-statistic)	0.000000		

Inverted AR Roots .47

Full Data Set Model

Dependent Variable: THERMDAY
Method: ARMA Maximum Likelihood (OPG - BHHH)
Date: 03/31/20 Time: 12:33
Sample: 2012M01 2019M05
Included observations: 89
Convergence achieved after 17 iterations
Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.548419	0.025350	21.63408	0.0000
HDDDAY	0.162754	0.001504	108.2411	0.0000
SUMMERMONTH	-0.083367	0.031202	-2.671862	0.0091
AR(1)	0.499472	0.088915	5.617431	0.0000
SIGMASQ	0.003925	0.000533	7.359944	0.0000

R-squared	0.997113	Mean dependent var	1.732828
Adjusted R-squared	0.996976	S.D. dependent var	1.172667
S.E. of regression	0.064487	Akaike info criterion	-2.586936
Sum squared resid	0.349322	Schwarz criterion	-2.447125
Log likelihood	120.1186	Hannan-Quinn criter.	-2.530582
F-statistic	7253.869	Durbin-Watson stat	1.908002
Prob(F-statistic)	0.000000		

Inverted AR Roots .50

CASE: UG 388
WITNESS: SCOTT GIBBENS

PUBLIC UTILITY COMMISSION
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STAFF EXHIBIT 1003

Exhibits in Support
Of Opening Testimony

April 17, 2020

Full Monthly Dummy Model

Dependent Variable: THERMDAY
Method: ARMA Maximum Likelihood (OPG - BHHH)
Date: 04/14/20 Time: 09:39
Sample: 2012M01 2019M05
Included observations: 89
Convergence achieved after 8 iterations
Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
HDDDAY	0.151130	0.003337	45.28575	0.0000
D1	0.780271	0.062660	12.45242	0.0000
D2	0.797410	0.057024	13.98376	0.0000
D3	0.728126	0.052092	13.97767	0.0000
D4	0.661088	0.037947	17.42147	0.0000
D5	0.576015	0.033370	17.26164	0.0000
D6	0.567586	0.034037	16.67546	0.0000
D7	0.482869	0.035981	13.41997	0.0000
D8	0.426719	0.075851	5.625750	0.0000
D9	0.446107	0.088689	5.029994	0.0000
D10	0.534721	0.059246	9.025428	0.0000
D11	0.626428	0.041507	15.09213	0.0000
D12	0.681273	0.057754	11.79601	0.0000
AR(1)	0.590448	0.090263	6.541421	0.0000
SIGMASQ	0.002694	0.000399	6.744307	0.0000

R-squared	0.998018	Mean dependent var	1.732828
Adjusted R-squared	0.997644	S.D. dependent var	1.172667
S.E. of regression	0.056924	Akaike info criterion	-2.736860
Sum squared resid	0.239789	Schwarz criterion	-2.317427
Log likelihood	136.7903	Hannan-Quinn criter.	-2.567799
Durbin-Watson stat	1.920032		

Inverted AR Roots	.59

CASE: UG 388
WITNESS: SCOTT GIBBENS

PUBLIC UTILITY COMMISSION
OF
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STAFF EXHIBIT 1004

Exhibits in Support
Of Opening Testimony

April 17, 2020

Exhibit Staff/1004

Gibbens/1

F-Tests and T-Tests

	Albany	Astoria	Coos Bay	The Dalles	Eugene	Lincoln City	Portland	Salem	
Albany		Same	Different	Different	Same	Different	Different	Different	Mean
Astoria	Different		Different	Same	Same	Different	Different	Different	
Coos Bay	Different	Same		Different	Different	Different	Different	Different	
The Dalles	Same	Different	Different		Same	Different	Different	Different	
Eugene	Same	Same	Different	Same		Different	Different	Different	
Lincoln City	Different	Different	Same	Different	Different		Different	Different	
Portland	Same	Different	Different	Same	Different	Different		Different	
Salem	Same	Different	Different	Same	Same	Different	Same		
				Variance					

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	682.5867	88	7.756667	153.6545	0	1.285211
Columns	12.40543	7	1.772204	35.1062	2.79882E-41	2.024429
Error	31.09644	616	0.050481			
Total	726.0885	711				

CASE: UG 388
WITNESS: GEORGE R. COMPTON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1100

Opening Testimony

April 17, 2020

STAFF OPENING TESTIMONY

Q. Please state your name, occupation, and business address.

A. My name is George R. Compton. I have been employed by the Public Utility Commission of Oregon (OPUC) since 2007. I am a Senior Economist (part-time) within the Energy Rates, Finance, and Audits Division. My business address is 201 High St., Salem, Oregon 97301-3612.

Q. Please describe your educational background and work experience.

A. My Witness Qualification Statement is found in Exhibit Staff/1101.

Q. What are the subjects of your testimony?

A. The three general subjects of my testimony are (1) the Company's long-run incremental cost (LRIC) study, with the allocation of those costs among customer classes; (2) how and to the extent to which LRIC cost allocations translate to the rate spread, i.e., the apportioning of the total revenue increase among the various customer schedules; and (3) what prices, or rate designs, should be in place for recovering those revenue shares and the total revenue requirement. The Northwest Natural Gas Company (NWN, NW Natural, or Company) witness for these case elements is Robert J. Wyman; his exhibits are numbered 1100 through 1103.

Q. Would you please provide a little more context to those subjects?

A. The Company has made a general rate case application to increase the non-commodity/pipeline-cost portion of its rates and revenues structure. That

portion of the overall revenue requirement is referred to as the margin.1 The end product of a general rate case are line-item tariff prices such that if the sales volumes projected for the test period hold, then applying those prices to those sales volumes will yield the revenues that match the margin portion of system's accounting/embedded costs recognized as just and reasonable by the Public Utility Commission of Oregon (Commission). Fuel/energy pass-through dockets are the vehicles for aligning other tariff/rates with the primary non-margin portion of the revenue requirement, i.e., the gas/commodity costs.

In contrast with the embedded costs that are recorded in a utility's depreciation-reflecting accounting books and records, LRIC costs refer to estimates of what it would cost to replicate the system with all new materials and equipment. (The benefits of relying upon LRIC as a rate spread basis is discussed later in this testimony.) A strict LRIC-based target allocation of margin costs to the various customer schedules would be the outcome of allocating shares of embedded costs categories to customer schedules strictly in proportion to their respective shares of LRIC costs for the respective categories. The "rate spread" cost allocation process can deviate from the strict LRIC-based target allocation in order to avoid the burden of imposing an increase to a particular customer schedule that is unacceptably out of line with the overall increase, and to avoid allowing some schedules to receive a

[1] Specifically, the tariff items dedicated to the margin portion of the revenue requirement carry the label "Base Rate."

rates decrease in the context of a significant increase being imposed on most of the other customer schedules.

Q. Does Staff possess a general philosophy or approach to these subjects?

A. Yes. As a general matter, pricing and customer cost allocations should reflect long-run-incremental cost-causation as much as possible—noting the rate spread caveats mentioned at the end of my answer to the previous question.

Q. Did you prepare exhibits for this docket?

A. Yes. I prepared Exhibit Staff/1102 which shows the numerical development of Staff's recommended LRIC results and rate spread.

Q. How is your testimony organized?

A. This testimony is organized as follows:

Issue 1. LRIC Adjustments 5
Issue 2. Rate Spread Recommendations.....15
Issue 3. Rate Design Recommendations……19

Q. Please provide an overview of your testimony.

A. The LRIC study and its use in the NW Natural application for an increase of 18.87 percent in its margin revenues is generally in conformance with the Staff/Company agreed upon approach employed by the other two Oregon gas utilities, Avista Corporation ("Avista") and Cascade, in their most recent general rate cases. To recover the indicated additional revenue, NW Natural proposes increases to retail rates for all of its customers, including its large commercial and industrial ones—even though the LRIC study results justify substantial *decreases*. The only difference in this regard between Staff and

the Company is that the latter recommends a 10.93 *increase* to large commercial and industrial customers while Staff recommends limiting increases for these large customers to 8.20 percent.

Having said that, it should be emphasized that Staff's recommended ceiling of 8.20 percent applies only in the *unusual event that NWN receives its requested increase in its entirety.* If the overall margin percentage increase is no greater than 10 percent (which is a little over half of the NWN formal request), I recommend that the subject large customers receive no increase.[2] That was the *final* outcome for most large customers in the most recent Avista general rate case.

The table below shows the spread recommendations of the Company and Staff assuming NW Natural were authorized to recover the full amount of its requested general rate increase.

TABLE 1: Proposed Margin Revenue Percentage Increase by Schedule[3]

	Company	Staff
Residential Schedule 02	18.87%	19.37%
Small Commercial Schedule 03CSF	23.50%	23.50%
Small Industrial Sales 03ISF	10.93%	8.20%
Commercial Firm Sales 27R	18.87%	13.00%
Large Commercial Firm 31CSF & 32CSF	10.93%	8.20%
Large Industrial Firm 31ISF & 32ISF	10.93%	8.20%
Interruptible Comm. & Ind. Sales 32CSI & 32ISI	10.93%	8.20%
Comm. Firm Transportation 31CTF & 32CTF	10.93%	8.20%
Industrial Firm Transportation 31ITF & 32ITF	10.93%	8.20%
Interruptible Transportation 32CTI & 32ITI	10.93%	8.20%
Margin Overall	18.87%	18.87%

[2] The Company is silent regarding how the rate spread relationships might be altered in the event of an appreciable reduction in the authorized revenue requirement.

[3] Assumes the Company receives its requested revenue requirement increase in its entirety. These amounts will have to be adjusted based on the OPUC final order.

As regards rate design, with a single exception NWN proposes that all of the increases are to apply to the volumetric, or per-therm, rates. The exception is the small commercial Schedule 3C, where about 20 percent of the proposed increase would come from raising the monthly customer charge from $15 to $20. Independent of the overall increase authorized by the Commission in this case for that schedule, Staff recommends limiting the customer charge portion of the increase to $3.

Finally, Staff makes one more rate design recommendation: Elevate the Schedule 27 (Dry Out) monthly customer charge from $6 to $8, which is the current residential schedule customer charge.

ISSUE 1. LRIC ADJUSTMENTS

Q. You have indicated that the purpose of allocating costs in the context of a general rate case is to apportion the margin, or non-gas/commodity portion of the revenue requirement among the various customer classes/schedules. Do the utilities keep their accounting books along those customer class lines so that each class would only have to pay the costs that have been placed in its respective account?

A. No—accounts tend to be aggregated by equipment/plant category, not by customer type. The LRIC approach disaggregates costs within general functional categories by performing studies of what it would take to newly replicate the equipment needed for each customer schedule in order to perform that function, then sums those amounts across all the customer

schedules, and finally allocates shares of the *embedded* total costs of that functional category in proportion to each schedule's share of the sum of new equipment costs for that category.

Q. Please provide an example that illustrates the point you just made.

A. Consider the cost treatment of meters, and how, as an example, the residential share of the embedded cost of meters would be estimated.[4] The utility does *not* track separately the cost of meters for the residential schedule, for the commercial schedule, for the interruptible industrial schedule, and so forth.[5] Instead there may be simple ledger entries of meter capital investments. The *embedded cost* revenue requirement for meters *in total* is the outcome of how those investments have been and are being depreciated and what capital cost/tax markup is applied. O&M is another embedded cost element for meters. Combined with service lines, the total meters portion of the embedded cost revenue requirement is shown as the total on Line 20 of my Exhibit Staff/1102.

An LRIC study is used to allocate those embedded meter (and services) costs among the various customer schedules. Line 9 of Staff/1102 shows the LRIC meters costs shares assigned to the various customer schedules. The residential schedule share of that total is obtained as follows:

[4] For expository simplicity it is here assumed that metering is a stand-alone function for accounting purposes. In practice the metering function is combined with the service line function for the embedded cost allocation step.

[5] An immediate complication arises from the fact that a particular industrial customer might start off as a full, firm service industrial customer, then migrate to interruptible status, and even might end up as a transportation customer.

Estimate the investment for a single typical *new* residential meter; convert it to a revenue requirement (by bringing in capital costs, depreciation, and O&M); and multiply that revenue requirement by the total number of residential customers. Then do the same thing for all the other schedules and add together all the schedules' as-new metering revenue requirements. Finally, take the residential share of that Line 9 LRIC sum, which is 84 percent in this case and use it as the residential share of the embedded meter costs shown on Line 20.

Q. Is Staff generally satisfied with how Northwest Natural has conducted its LRIC study?

A. Yes, we are. I do make a few adjustments to NWN's LRIC modelling, but these adjustments are too small to affect my final rate spread recommendations—which, as previously indicated, follow the Company's in large measure.

Q. I'm interested in the specifics of those adjustments. Might we please go to your principle exhibit so that we can walk through them?

A. Certainly, let's turn to Exhibit Staff/1102, which is largely a replication of NWN's Mr. Wyman's Exhibit 1101.

Q. I observe that the first numeric column of Lines 18 through 22 contains the Company's test period projections of the costs assigned to the respective functional categories. Line 18 shows the "Cost of Gas Commodity." Since those costs are addressed in a PGA docket rather than in a general rate case, can we assume that Line 18 and its

dependents only serve our purposes so as to provide perspective—as in how much gas per se costs in comparison to the costs of other elements of the utility's revenue requirement?

A. That is correct.

Q. Referring to Lines 19-22 of your Exhibit Staff/1102, I notice that by far the largest *margin* cost component is the "Total Main Costs."[6] How are these costs treated for LRIC purposes?

A. There are two basic categories of mains, each with a different cost treatment. The largest category, main extensions, accounts for more than three-fourths of the total. The primary driver of main extension LRIC cost shares is how many feet of the various sized pipes are required, on average, to serve the customers of each schedule.[7] The other mains category is the large-diameter, core mains that serve a host of customers and customer classes *simultaneously,* as the gas is being transported from the interstate pipeline delivery point out to the neighborhoods. Most of this category's costs are allocated in proportion to each customer schedule's peak-day demand—a primary driver of the sizing of these mains. In recognition of the fact that much of the investment in core mains is also for safety purposes, the balance of this large-diameter category's costs are allocated on the basis of each customer

[6] Recall that the "Cost of Gas Commodity" is not normally addressed in a general rate case.
[7] Examples: About fifty feet of mains are, on average, required to serve each NWN residential customer; over five hundred feet are required to serve large industrial customers. Also, large customers tend to be served by more expensive, larger diameter mains.

schedule's share of the system annual throughput.[8] In this latter case, the notion is that safety benefits are proportional to annual consumption shares.

Q. With that background, let's turn to your exhibit and address the items where notes are involved, starting with Line 4b. What is your point in this instance?

A. Line 13 indicates that a portion of the System Core Main costs are allocated according to Firm (Peak Day) Demands, which are contained in Line 4b. Because interruptible customers have no claim to gas in a stressful peak day circumstance, theoretically their loads aren't taken into consideration when it is decided how much money is to be spent in establishing the system's peak delivery capability. Accordingly, the Company in this instance shows no firm peak deliveries to the interruptible customers (shown on Line 4b) and assigns none of the associated firm demand-related core main costs to them (Line 13).

Q. Are there exceptions to the principle of a zero-cost assignment of capacity-related core main costs to interruptible customers?

A. Yes. In its most recent general rate case Avista recommended treating interruptible customers as firm customers for cost allocation purposes, perhaps because they are seldom if ever interrupted. Staff made a

[8] The estimated design day load factor, or about 30 percent for NWN, is the throughput share of the core main LRIC costs. The design day load factor is the annual average daily load (i.e., the annual total divided by 365) divided by the peak-day total load.

comparable proposal in that case (for illustrative purposes),[9] but recommended only a fifty-percent-based inclusion of firm demand costs for interruptible customers. Staff's proposal recognized that while interruptible customers receive tangible benefits from the virtually non-existent interruptions, they also a) may make substantial equipment or other investments that mitigate interruption damages or b) accept the risk of the damages themselves. In that case as well as in this one, adding these demand costs to the interruptible customers would do little to subtract from the degree to which, for other reasons, those interruptible customers are being allocated costs in excess of the LRIC cost-causation results.

Q. What's the point in distinguishing between the two kinds of "Peak Firm Day Deliveries," Lines 4b and 4d?

A. The relevance here has to do with the allocation of system storage costs. The gas used to charge the storage tank(s) would not be gas purchased by transportation-only customers from their own suppliers. Since it is not their gas in the storage vessels, the transportation customers would have no claim to that gas and shouldn't have to pay for the storage facilities. On the other hand, a significant amount of storage helps the system to avoid interrupting customers categorized as "interruptible." Line 4d includes the interruptible customers as sharing in the storage costs. The key allocation principle is that

[9] I said "illustrative" because the issue was moot in the Avista case owing to the Staff recommendation that the affected schedule receive a zero increase independent of the capacity allocation adjustment.

the customer schedules should bear storage costs in proportion to their peak day demands—again assuming no interruptions. Staff and the Company are in agreement regarding this treatment of storage costs.

Q. What point do you wish to make regarding Line 11?

A. A key driver of the costs of main extensions assigned to each of the customer schedules is the average length of pipe associated with each schedule. Frankly, the wide range of average lengths *within* the several customer groups stretched this Staff person's credibility. Refining those amounts within the time frame of a general rate case seemed most unlikely. To test the sensitivity of general cost allocations to this category of costs, I assumed that each schedule within a given customer category required the *maximum* length of pipe observed for the category. Making that adjustment does not subtract substantially from the large cost allocation reductions that the basic LRIC study indicates they are entitled to.

Q. What point do you wish to make regarding Lines 12 and 13?

A. The issue is with regard to the year(s) of costs applicability. While the NWN LRIC study of main extensions assumed 2021 test period customer counts and costs, the core mains portion (Lines 12 and 13) in the Company's model was based not upon the costs of large-diameter pipes hypothetically placed in the ground in 2021, but rather upon an inventory of pipes already installed as of last year's cost study. Learning of a projected 4.5 percent increase in customers between when the study was conducted and the test period, I inflated the core mains' cost by that same amount as an expedient core-

mains growth-proxy in order to have a uniform test-period alignment across all the LRIC cost categories.

Q. Did that adjustment reduce the LRIC cost estimates for the two schedules, residential and small commercial, which the Company shows as accounting for almost the entire general rate increase?

A. Not by an appreciable amount. Large rate *reductions* would still be justified for the larger-size customer schedules.

Q. What point do you wish to make regarding Lines 14 and 22?

A. As stated in my previous answer, it is incumbent to place all of the cost categories into a uniform test period context. More explicitly, the notion is to reproduce the costs of all of the resources as if new in 2021, which is the test period for this general rate case. Note that the LRIC storage figure on Line 14 is just a fraction of the storage embedded cost figure on Line 22. It turns out that both Staff and the Company allocate the Line 22 total according to non-transportation firm peak day deliveries…meaning that Line 14, and uncertainties regarding its genesis, can be disregarded for LRIC-based cost allocation purposes in this case.

Q. What point do you wish to make regarding Line 16, Total System Reinforcement Cost?

A. This small-dollar figure was eliminated in my analysis on the basis that my 2021 total mains incremental costs figures—i.e., including main extensions and core mains—should not incorporate any reinforcements. That is because brand-new test-period plant should not require reinforcements. (The study-

period plant inventory included reinforcements.) It turns out that, perhaps unintentionally, the amounts in this line had no part in the Company's LRIC-based cost allocations to the customer schedules. Likewise, for reasons just stated, this Line plays no part in my allocations.

Q. What point do you wish to make regarding Lines 18, 23, and 25, where the cost of gas-commodity is involved—by itself or part of a sum?

A. First, to reiterate, the cost of gas commodity—contained in Lines 18 and 23—should play no role in the LRIC-target allocations portion of a general rate case. The LRIC-target allocations of the functionalized embedded margin revenue requirement are shown on Line 24 (addressed below).

Where gas commodity costs do have relevance is in regard to their part of the utility's overall (i.e., including non-margin) revenues based on current rates. This is justified because a standard aspect in communicating the impact on customers of the increase in authorized *margin* rates is to convey what that increase means in terms of the percentage increase in their *total* bills, i.e., inclusive of the non-margin cost elements. Line 25 provides the total revenues/costs basis for making that percentage calculation.

Q. What point do you wish to make regarding Lines 18 through 23?

A. The Company's filed Exhibit/1101 inadvertently shifted over to the functionalized margin costs the portion of Other Taxes that are paid along with gas-commodity costs in WACAG dockets rather than general rate case dockets. Lines 18 through 22 correct that error. The result is to reduce the requested margin cost components of Lines 19 through 22. The Line 23

overall grand total remains the same as in the Company exhibit, but the values for the individual customer schedules are altered slightly.

Q. What point do you wish to make regarding Line 24?

A. The amounts shown on this line for the individual customer schedules are, appropriately, the sums of the corrected allocated amounts for the functionalized margin cost accounts, i.e., Lines 19-22. The sum, $450,203,403, is merely the sum of the customer schedules' LRIC-determined margin costs across all of the schedules.

Q. What point do you wish to make regarding Line 29, the Company's LRIC based target margins revenue increases?

A. This amount, which is the Company's requested revenue requirement increase was obtained by subtracting *overall* total revenues obtained via current rates from the Company's projected *overall* total costs. As stated near the beginning of this testimony, the determination of the revenue requirement shortfall in the general rate case context is found by subtracting total *margin* revenues obtained via current rates from the Company's projected total margin costs. Staff's corrected version of total margin costs produced essentially the same revenue requirement deficiency as was obtained by the Company's taking the difference in overall totals.

Q. What point do you wish to make regarding Lines 32 and 35, the recommended margin revenue increases?

A. These and the immediately surrounding lines show the LRIC *influenced* (in contrast with the *target*) margin revenue increases, including "rate spreads"—

as dollar amounts and percentages. For whatever reason, the Company has recommended a total margins increase that is slightly smaller than its LRIC Target total. As indicated at the beginning of my testimony, the Staff and Company recommendation totals are identical in order to easily distinguish how Staff would *spread* those total differently across the individual rate schedules. Staff's rate spread rationale for this docket is the subject of the next section of this testimony.

Q. What point do you wish to make regarding Line 37?

A. Indicated are Staff's recommended spread percentages in the event of a 10 percent revenue increase. The rationale is also presented in the following section of this testimony.

ISSUE 2. RATE SPREAD RECOMMENDATIONS

Q. In your introductory remarks you noted that you agree with the Company that large commercial and industrial schedules should receive rate increases despite LRIC indications that rate decreases are warranted. What is the justification for those increases?

A. First let me clarify that my non-zero recommendation applies only if Northwest Natural is awarded a revenue requirement increase in excess of 10 percent. The table on page three of this testimony assumes an overall increase of 18.87 percent, with residential customers receiving increases close to that amount and small commercial customers (Schedule (03CSF) receiving increases in excess of twenty-three percent. A rate increase above 20

percent is undoubtedly unexpected, and possibly "shocking" in an economy experiencing general inflation around 2 percent and where fracking continues to bring down the price of natural gas as a commodity. So, to answer your question: The twenty-three percent small commercial increase amount would have been even higher had there not been the substantial increases jointly recommended by Staff and the Company to be received by the larger customers.

Q. Having agreed with the Company regarding the suitability of rate increases for the large commercial and industrial customers, why do you recommend smaller percentage increase for those large customers compared to what NWN is proposing?

A. Increasing Northwest Natural's proposed increase to residential customers by a very small percentage can enable a significant reduction in the increase for the large commercial and industrial customers. Refer to my Exhibit 1102. Note from Line 31 that the Company is recommending a residential margin percentage increase percentage that is identical to the overall percentage increase, 18.87 percent. On the other hand, note from comparing Staff's Line 34 residential figure with NWN's on Line 31 that Staff would recommend a residential margin percentage increase that is 0.50 percent greater than NWN's recommendation. This small percentage increase would add only $2 *per year* to the average residential bill.[10]

[10] Derivation of the $2 (employing inputs from Exhibit/1102): Current Line 26 residential annual margin revenues of $254,772,129…times 0.50% = $1,273,861…divided by 623,209 (Line 2, residential customers) = $2.04.

Perusing the large schedules' LRICs on Lines 30a and 41, you'll observe *negative* LRICs that frequently exceed 30 percent. If a customer who warrants a minus 30 percent *decrease* were to receive an 11 percent *increase*, this would mean that he is receiving an increase that departs from the LRIC figure by 41 percent (30 percent plus 11 percent). In Staff's view it is eminently appropriate to increase a LRIC-to-rate spread disparity by less than one percent for residential customers so as to permit more than a 2.5 percent reduction (10.93 percent minus 8.20 percent equals 2.73 percent) in LRIC-to-rate spread disparities that typically range in the 40 percent-plus neighborhood. I note that my 2.73 percent benefit swing in favor of the large customers would not have been possible had there not been such a huge difference in annual margin revenues between the residential schedule and the *aggregate* of the large customer schedules ($255 million compared to $93 million).

Q. Given the virtual inevitability of a revenue requirement award significantly below the Company requested 18.87 percent, isn't the immediately preceding discussion academic?

A. Not at all. Some points regarding key regulatory principles were more easily made in the discussion up to this point when Staff's figures could be directly juxtaposed with Company figures by virtue of the fact that underlying both was a common recommended average percentage increase (18.87 percent).

Q. Earlier you said that if the overall percentage increase was ten percent or lower, then you would recommend zero percent increase for the large

commercial and industrial customers. In the event of the ten percent average increase, what are you recommending regarding the three customer schedules (Residential [02], Small Commercial [03CSF], and Dry Out [27R])?

A. The following table shows the Staff recommendations under an 18.87 percent overall average increase and a 10 percent overall average increase. Those figures are also found on lines 37 and 34 of my Exhibit Compton/1102. Note the reduction of close to nine percent for all three of the schedules for which an increase would be recommended. Uniform scaling would apply to awarded increases between 10 percent and 18.87 percent.

TABLE 2: Staff-Proposed Margin Hypothetical Percentage Increases

	Staff	**Staff**
Residential Schedule 02	10.40%	19.37%
Small Commercial Schedule 03CSF	14.55%	23.50%
Small Industrial Sales 03ISF	0.00%	8.21%
Dry Out 27R	4.00%	13.00%
Large Commercial Firm 31CSF & 32CSF	0.00%	8.20%
Large Industrial Firm 31ISF & 32ISF	0.00%	8.20%
Interruptible Comm. & Ind. Sales 32CSI & 32ISI	0.00%	8.20%
Comm. Firm Transportation 31CTF & 32CTF	0.00%	8.20%
Industrial Firm Transportation 31ITF & 32ITF	0.00%	8.20%
Interruptible Transportation 32CTI & 32ITI	0.00%	8.20%
Overall	**10.00%**	18.87%

ISSUE 3. RESIDENTIAL AND GENERAL SERVICES CUSTOMER CHARGES

Q. There is a common industry practice of categorizing costs as either demand, energy, or customer related. Would it be appropriate to recover all of non-demand- or non-energy-related costs through the monthly customer charge?

A. No. It wouldn't even be appropriate to recover all legitimately customer-related costs through the customer charge. The practice Staff has employed in the past is that, at most, customer-related costs appropriately recovered in the customer charge are costs that are confined to individual customers—i.e., not shared in any way. Those costs that are not shared would include each customer's meter and service line, meter reading, and preparing and mailing customer bills, as well as processing the payment. Other customer-related costs, such as the utility's information systems hardware and personnel, are shared among all customers and for a host of functions besides billing customers. For that reason, while these and other shared gas utility costs may be categorized as neither demand- nor energy-related, they are nevertheless historically recovered through volumetric energy (or even demand) charges.

Q. Have other criteria been brought to bear in the setting of customer charges?

A. Yes. It is not uncommon for a utility to request a customer charge increase that in percentage terms is much larger than its overall requested increase. I

believe that unless the existing customer charge falls well short of the recognized costs as just itemized, Staff has always recommended a customer charge increase that was much smaller than the requested large amount.

Q. What arguments have been used in support of not elevating the customer charge as much as the recognized portion of customer costs would justify?

A. Consider these two:

1. There is a long-standing Oregon public policy preference—in the interest of promoting energy conservation—for preferring volumetric-based rates over fixed charges. In an extreme case where the overall increase is to be very small, a *decrease* in volumetric rates may even be required in the context of an otherwise justified large fixed charge increase in order to avoid collecting excess revenues from those customers.
2. Confusion and customer push-back may occur with very small customers when a large fixed charge increase occurs in the presence of a media-*announced* small overall percentage increase, because a low-use customer may see a significantly greater percentage increase than what was announced.

Q. Previously you mentioned cases where, especially for the residential schedule, the company-requested customer charge increase was on a percentage basis much greater than the overall increase. How would you characterize the present NW Natural application in that regard?

A. Just the opposite: the only customer charge increase requested is for the small commercial schedule. Not coincidentally that is the schedule for which the Company recommends the largest overall percentage increase, which Staff endorses. Again, no increase is being requested for the residential customer charge.

Q. NW Natural is proposing to elevate the small commercial monthly customer charge from $15 to $20. Does Staff concur?

A. No. That represents a 33.33 percent increase in the context of a requested 13.32 percent overall increase for that schedule.[11] For reasons stated earlier, the authorized increase is expected to be well below that amount. Referring back to Table 2 above, in the event of a system-overall margin percentage increase of 10 percent, I am recommending a 14.55 percent margin increase for the small commercial schedule. To offer something independent of the final authorized awards, I would recommend increasing the small commercial customer charge by 20 percent – taking it to $18 per month.

Q. Do you have any other customer charge recommendations?

A. I do, it is to elevate the Schedule 27 (Dry Out) monthly customer charge from $6 to $8, i.e., to make it the same as NWN's residential customer charge. The "Drying Out" refers primarily to drying paint towards the tail end of a building construction project. Justification for the increase is that the costs that the customer charge is to cover, i.e., primarily the meter and service line, are expected to be at least as large for this schedule as they are for the

[11] *See* Line 36 from my Exhibit/1102.

schedule where those costs are the lowest, i.e., the residential schedule. Caveat: While Schedule 27 is not included among the schedules for which Staff is suggesting no increase in a reduced revenue requirement context, the Schedule 27 customer charge increase should not go beyond what would lead to a *decrease* in the volumetric charge.

Q. Does this conclude your direct testimony?

A. Yes.

CASE: UG 388
WITNESS: GEORGE R. COMPTON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1101

Witness Qualifications Statement

April 17, 2020

WITNESS QUALIFICATION STATEMENT

NAME: George R. Compton

EMPLOYER: Public Utility Commission of Oregon

TITLE: Senior Economist
Energy Rates, Finance & Audit Division

ADDRESS: 201 High Street, SE., Suite 100
Salem, OR. 97301

EDUCATION: Doctor of Philosophy, Economics (1976)
University of California, Los Angeles (UCLA) – Westwood, CA

Master of Science, Statistics (1968)
Brigham Young University (BYU) – Provo, UT

Bachelor of Science, Mathematics and Psychology (1963)
Brigham Young University – Provo, UT

EXPERIENCE: I have been employed in utility regulation since receiving my Ph.D. in 1976. My primary employer was the Division of Public Utilities, within Utah's Department of Commerce (formerly Business Regulation). I also consulted for a couple of years, early in that period. I testified frequently during my career on rate design, cost-of-service, cost-of-equity, and various policy matters affecting electric, gas, and telephone utilities. While in Utah, I also taught Economics part-time for about ten years at BYU.

Prior to my utility regulatory career, I worked in aerospace for eleven years at McDonnell Douglas (now Boeing) in Southern California

I joined the OPUC staff soon after "retiring" to Oregon at the end of 2006. Principal cases of my involvement here have included the IRP/CO_2 Risk Guideline (UM 1302), an Avista General Rate Case (UG 181 and 284), PGE General Rate Cases (UE 197, UE 215, UE 262, and UE 283), PacifiCorp General Rate Cases (UE 210, UE 246, and UE 263), the NW Natural General Rate Case (UG 221), and the Idaho Power General Rate Case (UE 233).

CASE: UG 388
WITNESS: GEORGE R. COMPTON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1102

Exhibits in Support
Of Opening Testimony

April 17, 2020

Staff Exhibit 1102 is filed

In electronic format

CASE: UG 388
WITNESS: PAUL ROSSOW

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1200

Opening Testimony

April 17, 2020

Q. Please state your name, occupation, and business address.

A. My name is Paul Rossow. I am a Utility Analyst employed in the Energy Resources and Planning Division of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE, Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. My Witness Qualifications Statement is found in Exhibit Staff/1201.

Q. What is the purpose of your testimony?

A. The proposed adjustments I recommend are derived from review of multiple data responses, analysis of NW Natural's 2019 Operation and Maintenance non-payroll transactions, and Commission dues and memberships policy.

Q. Did you prepare additional exhibits for this testimony?

A. Yes, I prepared Staff Exhibit/1202 – O&M adjustment and Staff Exhibit/1203 – Staff Travel Data Requests.

Q. How is your testimony organized?

A. My testimony is organized as follows:

Issue 1. Dues and Memberships..... 2
Issue 2. Operations and Maintenance Expenses..... 5

ISSUE 1. DUES AND MEMBERSHIPS

Q. Please summarize your adjustment.

A. I recommend the following adjustment (Oregon-allocated):

Dues and Memberships	($315,542)

Q. What expense does NW Natural include in test year expense for dues and memberships?

A. NW Natural's test year expense for dues and memberships is based on NW Natural's actual expense for 2019 and escalated for 2020 and 2021.

Q. What is the basis of your adjustment to this non-payroll operation and maintenance expense?

A. This adjustment to non-payroll operation and maintenance (O&M) expenses is regularly proposed by Staff in general rate cases, and its purpose is to share membership and dues expenses between stockholders and ratepayers.

Q. Please explain the dues and memberships adjustment.

A. This adjustment is to NW Natural's dues and memberships expenses recorded to non-payroll FERC accounts 820 through 935 provided in electronic spreadsheet format by NW Natural in its confidential response to Staff Data Request No. 173 Confidential Supplemental Attachment 1, 2019 O&M Transactions.[1] Staff searched for dues and memberships by using the cost element name and descriptions provided by the Company in its confidential response to Staff's Data Request No. 173 Confidential Supplemental

[1] The data in the Company's confidential response to Staff Data Request No. 173 is too voluminous to include as an exhibit. However, Staff does include data showing the FERC account totals for each account as Exhibit Staff/1202, Rossow/1.

Attachment 1, 2019 O&M Transactions. Staff sorted these expenses by cost element and description.

Then Staff used NW Natural's 2019 O&M transactional expenses for the Oregon allocated non-payroll expense for each FERC account and escalated to approximate the test year expense by applying the Company's escalators. Staff first escalated by 2.5 percent for twelve months, which is the escalation factor for the year 2020. Staff further escalated these amounts by 2.4 percent to arrive at the test year amount. Both of these West Region Urban Consumer Price Index (CPI) escalation factors were referenced NW Natural Exhibits 900 of Tobin Davilla.[2]

Keeping with Commission policy regarding dues and memberships for organizations in the energy utility industry, Staff recognized all the expenses associated with industry research organizations. The Gas Technology Institute is one such organization.

Staff recognized a disallowance of 25 percent of the expenses associated with national and regional industry organizations on the basis that certain levels of activities of such organizations are lobbying or promotional in nature, or otherwise do not benefit ratepayers. This disallowance represents a sharing of interests between stockholders and ratepayers in these organizations. An example of this type of organization is the American Gas Association, which advocates and promotes the benefits of natural gas.

[2] *See* NW Natural Exhibit 903, Davilla/46 (the CPI escalated factors used can be found on Page 42 of the Consumer Price Index reported in the September 2019 Oregon Economic and Revenue Forecast published by the Oregon Office of Economic Analysis).

Finally, Staff applied a 100 percent disallowance of the expenses associated with technical, commercial, trade, community affairs, and economic development organizations.

Table 1 summarizes the total Oregon allocated amount for the Cost Element Dues and Membership in FERC accounts 820 through 935, and the disallowed amount:

Table 1. Cost Elements Adjustment by Staff

Cost Element	Total Oregon Allocated Amount ($)	Disallowed Amount ($)
Dues/Membership	1,587,958	315,542

Table 2 below indicates the proposed amount to be disallowed from each FERC Account.

Table 2. Disallowed Amounts by FERC Account

FERC Account #	Proposed Disallowance ($)
820	26
856	14
870	5,308
874	48
878	124
879	17
880	37
885	728
887	38
903	371
908	8,097
909	455
912	5,505
913	750
921	233,682
926	406
930	59,602
935	333
Total	315,542

This results in an Oregon allocated test year decrease of $315,542.

ISSUE 2. OPERATIONS AND MAINTENANCE EXPENSES

Q. Please describe the operations and maintenance (O&M) for non-payroll expenses at issue.

A. The Federal Energy Regulatory Commission (FERC) has classified the FERC accounts Nos. 816 - 935 as O&M. Staff reviews these accounts for expenditures that are discretionary in nature and according to commission policy should be shared between customers and shareholders. For instances, these expenses include meals and entertainment, awards, gifts, travel, candy, coffee, flowers, and other similar miscellaneous expenses.

Q. Please provide a summary of the Company's filed proposal for O&M expenses.

A. NW Natural proposes including $185.2 million of O&M in the 2021 test year on an Oregon allocated basis. As explained in Staff Witness Gardner testimony, NW Natural escalated the 2019 base year expense using the West Region CPI of 2.5 percent and 2.4 percent for years 2020 and 2021, respectively.

Q. Please explain the Commission's historical treatment of O&M non-payroll discretionary expenses.

A. O&M non-payroll discretionary expenses include awards, gift cards, food, meals, and entertainment. In Docket No. UE 197, the Commission adopted Staff's principle that expenses for meals and entertainment, office refreshments, catering, gifts, and awards are discretionary and should be

shared equally by ratepayers and shareholders.[3] Accordingly, a 50 percent sharing of such expenses between customers and shareholders is routinely recommended by Staff. In addition, Staff will recommend disallowance of O&M non-payroll expenses that are imprudent or excessive or do not benefit Oregon regulated utility operations at a transactional level.

Q. Please describe staff's analysis of the company's proposal for O&M non-payroll expenses.

A. Staff reviewed the Company's response to Staff DR No. 173[4] (DR 173), to identify any O&M non-payroll discretionary expenses that appear to be excessive, without sufficient business purpose, and not related to the provision of safe and reliable energy to customers. In DR 173, the Company provided its 2019 O&M non-payroll transactional expenses in Excel format. The accounting data includes a number of fields including FERC accounts, transaction descriptions, vendor names, and cost elements. Cost elements are equivalent to cost types. From this spreadsheet, Staff created a workbook to aid in Staff's analysis of O&M non-payroll discretionary expenses. Staff filtered the data by certain cost elements and placed the results for each cost element in a separate worksheet. The selected elements were Donations, Meals and Entertainment, Refreshments, Miscellaneous, Non-employee Gifts, Employee

[3] See Order No. 09-020, pp. 20-21.

[4] DR No. 173 requested the Company to provide information for all non-payroll expenses recorded in all FERC accounts for the base year.

Awards, Employee Awards MLS, Business Travel, Conference Travel, and Travel in Territory.

Staff reviewed the expenses to determine whether they benefit customers or are discretionary and should be shared between customers and shareholders according to Commission policy.[5] The Commission has historically agreed with Staff that such discretionary expenses are not required to provide safe and adequate service to customers. Additionally, Commission policy does not require ratepayers to support causes in which they do not believe.[6]

Items Staff found to have no benefit to customers, Staff excluded at 100 percent. Those expenses Staff believed benefitted both customers and shareholders, Staff disallowed at 50 percent. Once Staff determined the disallowance based on 2019 dollars, Staff escalated using the Company's West Region CPI of 2.5 percent and 2.4 percent, respectively, to arrive at the test year adjustment.

Q. Would you please explain by cost element the basis for your exclusions.

A. Yes. For instance, within Meals and Entertainment, Staff noted transactions related to sporting events and expenses described as, Blazer game food, snacks, gifts, gift cards, flowers, cake, birthday celebration, donuts, baseball

[5] Examples of key words Staff used to search transactions included candy, gum, b-fast, bfast, dessert, party, balloon, bereavement, flower, meal, Christmas, floral, recognition, appreciation, food, award, going away, cake, birthday, b-day, snack, coffee, donut, doughnut, bowling, golf, blazer, ball, ticket, prize, gift, dinner, lunch, supper, breakfast, diner, restaurant, bfast, napkins, photo, xmas, flight, hotel, airfare, air fare, air, travel, parking, luggage, baggage, shuttle, motel, taxi, lodging, and airport.
[6] See OPUC Order No. 87-406 at 40-41, Order No. 91-186 at 16, and Order No. 09-020 at 20-21.

tickets, wine bottle, and football season tickets that Staff recommended excluding at 50 or 100 percent.

Staff then reviewed expenses recorded in cost element titled Miscellaneous and found discretionary expenses like, giveaways, candy, prizes, cards, and balloons. Staff disallowed these at 100 percent and 50 percent. Similar expenses were found in cost elements Refreshments and Non-Employee Gifts such as chocolate, flowers, fruit, gifts, gift cards, and water bottles.

Q. What was the result of Staff's review for these cost elements?

A. Excluding the Travel cost elements, after searching through O&M non-payroll 2019 Oregon base year expenses totaling $1,186,899, expenses that were disallowed 100 percent equal $38,160 and disallowances at 50 percent equal $575,212. Escalating these amounts to the 2021 test year results in a decrease to the Oregon test year expense of $641,281.[7,8]

Q. What is Staff's recommendation for the cost elements regarding travel?

A. Staff has outstanding Data Requests[9] pertaining to non-payroll expenses recorded within the following cost elements, Business Travel, Conference Travel, and Travel in Territory. Within these cost elements there are 4,157 transactions that lack sufficient supporting details to determine the nature and business purpose. Staff will not receive a response from the Company before this testimony is filed. Therefore, Staff recommends disallowing the entire

[7] UG 388 Staff Exhibit 1202, Rossow.
[8] See Staff's workpaper, UG 388 Staff Copy of DR 173 CONF Attachment 1 work paper.xlsx.
[9] UG 388 Staff Exhibit 1203, Rossow.

amount of $930,867 until the Company establishes its business case for travel expense.

Q. What is Staff total adjustment?

A. Staff total adjustment is a decrease of $315,542 for Dues and Memberships and a decrease of $1,572,148 for other O&M for a total of decrease $1,887,690.

Q. Does this conclude your testimony?

A. Yes.

CASE: UG 388
WITNESS: PAUL ROSSOW

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1201

Witness Qualifications Statement

April 17, 2020

WITNESS QUALIFICATIONS STATEMENT

NAME: Paul Rossow

EMPLOYER: Public Utility Commission of Oregon

TITLE: Utility Analyst
Energy Resources & Planning Division

ADDRESS: 201 High Street SE Suite 100
Salem OR 97302-1166

EDUCATION: Professional Accounting and Computer Application Diplomas, Trend College of Business 1987

EXPERIENCE: I have been employed with the Public Utility Commission of Oregon as a Utility Analyst since October of 2002. Current responsibilities include research issues relating to energy utilities. I have actively participated in regulatory rate case proceedings in Oregon, including UE 147, UE 167, UE 170, UE 179, UE 180, UE 197, UE 210, UE 213, UE 215, UE 217, UE 233, UE 246, UE 262, UE 263, UE 283, UE 335, UG 152, UG 153, UG 181, UG 186, UG 201, UG 221, UG 246, UG 284, UG 344, UG 347, UG 366, and UG 388.

I have attended the Utility Rate School sponsored by the Committee on Water of the National Association of Regulatory Utility Commissioners in May of 2005 and the Institute of Public Utilities sponsored by the National Association of Regulatory Utility Commissioners at Michigan State University in August of 2005.

CASE: UG 388
WITNESS: PAUL ROSSOW

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1202

Exhibits in Support
Of Opening Testimony

April 17, 2020

Cost element name	OR Non Payroll Expenses	100% Disallowance	50% Diallowance	Total Disallowed at 2019 cost	Escalated -2020 2.5%	Escalated - 2021 2.4%
Donations	0					
Meals and Entertainment	482,451	25,290	229,423	254,713	261,081	266,302
Miscellaneous	49,788	1,175	24,307	25,482	26,119	26,641
Refreshments	81,218		40,609	40,609	41,624	42,457
Non Employee Gifts	11,695	11,695		11,695	11,987	12,227
Employee Awards	455,077		227,539	227,539	233,227	237,892
Employee Awards MLS	106,669		53,335	53,335	54,668	55,761
Subtotal	1,186,899	38,160	575,212	613,372	628,707	641,281
Business Travel	304,444	304,444		304,444	312,055	318,296
Conference Travel	440,424	440,424		440,424	451,435	460,464
Travel in Territory	145,488	145,488		145,488	149,125	152,108
Subtotal Travel	890,356	890,356		890,356	912,615	930,867
	2,077,255	928,516	575,212	1,503,728	1,541,321	1,572,148

CASE: UG 388
WITNESS: PAUL ROSSOW

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 1203

Exhibits in Support
Of Opening Testimony

April 17, 2020

Oregon
Kate Brown, Governor

Public Utility Commission
201 High St SE Suite 100
Salem, OR 97301
Mailing Address: PO Box 1088
Salem, OR 97308-1088
Consumer Services
1-800-522-2404
Local: 503-378-6600
Administrative Services
503-373-7394

April 14, 2020

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RE:	Docket No.	Staff Request Nos.	Response Due By
	UG 388	DR 392	April 28, 2020

Please provide responses to the following request for data by the due date. Please note that all responses must be posted to the PUC Huddle account. Contact the undersigned before the response due date noted above if the request is unclear or if you need more time. In the event any of the responses to the requests below include spreadsheets, the spreadsheets should be in electronic form with cell formulae intact.

Topic or Keyword: Non-Payroll Cost Elements Involving Travel

392. Referring to the Company's response, UG 388 DR 173 CONF Supp Attachment 1.xlsx,for each cost element, "Business Travel", "Conference Travel", and "Travel in Territory", please provide the following:
   a. A narrative definition for the type of travel that is recorded under each of the aforementioned cost elements;
   b. On an Oregon allocated basis, for each expense $1,000 through $3,000 within each cost element provide the supporting business evidence:
      i. the time and place
      ii. the business purpose; and,
   c. On an Oregon allocated basis, for each expense $3,001 and greater within each cost element provide the supporting business evidence:
      i. the time and place
      ii. the business purpose
      iii. the invoice,

iv. and the underlying supporting documentation, e.g. travel expense report, travel authorization, conference brochure, meeting agenda.

Please provide a definition describing cost element titled “Travel in Territory.”

Please name your responsive file to include the Data Request number. Once you have posted your response to the Data Request to the PUC Huddle account, use the “Sharing” feature of Huddle to generate an email to authorized parties notifying them that the response has been posted. In the body of the generated email, list the Data Request number associated with your response.

You must mark confidential responses as such and post them to Huddle in the appropriate “Confidential” folder. Access to Confidential folders is limited to individuals who have signed the protective order. You should not send confidential documents (hard copy or electronic) separately to the Commission or its Staff; you should post confidential responses only to the Huddle account.

Should you need to request an extension to the due date for the data responses you will need to contact the staff attorney assigned to the case for approval.

Questions regarding the use of Huddle should be directed to puc.datarequests@state.or.us.

/s/ Marianne Gardner, E-RFA, Manager Rates and Accounting

Staff Initiator: Paul Rossow paul.rossow@state.or.us 503-378-6917