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August 22, 2013

Public Utility Commission of Oregon
Filing Center
3930 Fairview Industrial Dr. SE
Salem, OR 97302-1166

Re: In the Matter of PacifiCorp, dba Pacific Power, 2013 Integrated Resource Plan
Docket No: LC 57 – STAFF OPENING COMMENTS

Dear Filing Center:

Enclosed for filing find Staff's Opening Comments submitted by Juliet Johnson.

Sincerely,

Neoma Lane

Neoma Lane
Legal Secretary
Business Activities Section

NAL:nal/4537340-v1
Enclosure
cc: Service List

CERTIFICATE OF SERVICE

I certify that on August 22, 2013, I served the foregoing Staff Comments upon the parties in this proceeding by electronic mail only, as all parties waived paper service.

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PUBLIC UTILITY COMMISSION
OF OREGON

LC 57

STAFF OPENING COMMENTS

In the Matter of
PACIFICORP,
dba PACIFIC POWER 2013
INTEGRATED RESOURCE PLAN

August 22, 2013

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

LC 57

In the Matter of PACIFICORP, dba PACIFIC POWER, 2013 Integrated Resource Plan.	STAFF'S OPENING COMMENTS

The Public Utility Commission of Oregon's (Commission) adopted Integrated Resource Plan (IRP) guideline 1.c. states:

> The primary goal must be the selection of a portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers.

In this IRP the Public Utility Commission of Oregon Staff (Staff) recognizes the existence of both traditional resource planning risks associated with market and system operations (i.e., load growth, gas prices, energy prices, and coal prices) and those risks that are more regulatory and political (i.e., uncertainties related to regional haze requirements based on state or federal implementation plans, carbon costs, future regulation of carbon pollution from existing power plants, and the willingness of regulatory agencies to approve alternative compliance actions based on early retirement of coal power plants). Both must be considered in the selection of the optimum portfolio of resources.

Pollution Control Investments

Staff is evaluating the potential shut down scenarios at Hunter 1 and Dave Johnston 3. Staff issued data requests to PacifiCorp (Company) to obtain additional System Optimizer and Planning and Risk (PaR) runs for shut down scenarios.[1] Staff continues to evaluate these and other alternatives to potential pollution control investments at the Company's owned coal plants.

Staff recognizes that the economics of shut down scenarios are largely dependent upon Environmental Protection Agency (EPA) potential actions related to regional haze and carbon regulation. We cannot wait until future regulatory decisions are finalized (into laws), before detailed economic analyses of potential outcomes should be performed. By the time such regulatory actions become final, it well may be too late. Future actions are not entirely unpredictable and, therefore, it is prudent for the Company to continue to plan

[1] Staff OPUC Data Requests 154-157.

ahead and anticipate a range of reasonable potential actions and perform analysis on those options while those options are practicable.

Regional Haze

The Company's base case regional haze investment assumptions were based upon proposed state implementation plans (SIP).[2] However, recent EPA actions have called into question the base case assumptions The recent EPA actions are the December 2012 rejection of Utah's state implementation plan (Utah SIP) and the June 2013 EPA action to partially reject the Wyoming SIP and the issuance of a more stringent federal implementation plan (FIP). As a result, Staff finds that PacifiCorp's assumptions for base case Regional Haze are now outdated for the following coal plants:

- In Utah:
    - Hunter 1
    - Hunter 2
    - Huntington 1
    - Huntington 2

- In Wyoming:
    - Dave Johnston 1
    - Dave Johnson 2
    - Dave Johnston 3
    - Dave Johnston 4
    - Jim Bridger 1
    - Jim Bridger 2
    - Jim Bridger 3
    - Jim Bridger 4
    - Naughton 1
    - Naughton 2
    - Wyodak

Staff has requested, but not yet received, information regarding how the Wyoming FIP will impact specific pollution control upgrades required and the associated costs. Staff continues to seek this information as part of this IRP process.

Regulation of carbon pollution at existing power plants

A June 25, 2013, Presidential Memorandum directed the EPA to propose "standards, regulations, or guidelines" related to carbon pollution for modified or reconstructed and existing power plants no later than June 1, 2014. On July 16, 2013, the Congressional Research Service issued a study of EPA Regulations and indicated that the New Source Performance Standard for Greenhouse Gas Emissions from Electric Generating Units (GHG NSPS) is expected to be released around September 20, 2013.[3] Staff requested,

[2] As described in the case study fact sheets in Appendix M of the 2013 IRP.
[3] Congressional Research Service: EPA Regulations: Too Much, Too Little, or On Track? July 16, 2013.

but has not yet received, information related to how the Company is evaluating the potential cost and risks of these forthcoming EPA requirements. Staff continues to seek this information in a timely manner as part of this IRP process.

<u>**Alternative Compliance Options**</u>

Staff is pleased to see that PacifiCorp performed some alternative compliance analysis related to delaying environmental investments on existing coal plants in exchange for a firm early retirement commitment. Staff requested the Company perform additional model runs using the Company's PaR for Hunter 1 and Dave Johnson 3 using an alternative lower gas price scenario generated by Staff. Staff would like to see more alternative compliance type analyses, including analyzing the economics of early retirement or repowering at one unit in exchange for reduced pollution control requirements at another in future IRPs and IRP updates.

<u>**Hunter Unit 1- Action Item 8b.**</u>

Relative to Action Item 8b.:

> Complete installation of the baghouse conversion and low NOx burner compliance projects at Hunter Unit 1 as required by the end of 2014.

Staff is investigating whether or not the installation of the baghouse conversion and low NOx burners at Hunter Unit 1 might be avoided if the coal analysis produces preferred alternatives. Staff recognizes that the EPA's current Mercury and Air Toxics Standards (MATS) require compliance by April 16, 2015. However, in the IRP PacifiCorp notes that "Individual sources may be granted up to one additional year, at the discretion of the Title V permitting authority."[4] This would push potential compliance or alternative action out to April 2016. Staff is continuing to look at alternatives at Hunter 1 and at this time does not support Action Item 8b.

<u>**Cholla Unit 4 - Action Item 8d.**</u>

Action Item 8d. states:

> Continue to evaluate alternative compliance strategies that will meet Regional Haze compliance obligations, related to EPA's FIP requirements to install SCR equipment at Cholla Unit 4. Provide an update of the Cholla Unit 4 analysis regarding compliance alternatives in the 2013 IRP Update.

The EPA disapproved portions of the Arizona Regional Haze state implementation Plan (Arizona SIP) for Cholla and issued a FIP that requires installation of a selective catalytic reduction unit (SCR) at Cholla by January 2018. Staff has not seen analysis of the economics or alternatives to compliance at Cholla.

[4] PacifiCorp 2013 IRP Page 37

Staff understands that PacifiCorp is involved in a lawsuit regarding Cholla. However, Staff has not yet seen a good cost and risk analysis for the upgrades required at Cholla. Timing is of the essence not only in terms of meeting the January 2018 SCR deadline, but also if an alternative compliance strategy, such as shut down or conversion is pursued. Staff is considering recommending to the Commission the following requirements for a 2013 IRP Update.

- A detailed economic analysis of compliance and shutdown / conversion options

- A flowchart showing key milestones and a timeline for installing an SCR at Cholla by the compliance deadline of the end of 2017.

- A flowchart showing key milestones and a timeline with dates and key milestones for retiring Cholla and replacing the energy and capacity as needed with the next best alternative.

More generally, with the uncertainty around regional haze requirements and state and federal approval of implementation plans, timing of decisions and expenditures becomes paramount. Key milestones, procurement times, and decision points need to be clearly articulated and the Commission given plenty of time to thoroughly review decisions prior to key investments being made. Staff recommends that in future IRPs and IRP updates, the Company provide a timeline with key milestones for each known and reasonably expected alternative pollution control compliance action, including shutdown or conversion.

Joint Ownership Plants

PacifiCorp is a minority owner in Craig 1 and 2 and Hayden 1 and 2 coal plants. The Company did not provide an economic analysis demonstrating the benefit to Oregon ratepayers of the pollution control investments at Craig 1 and 2 and Hayden 1 and 2, currently being planned for 2016 and 2017. In Docket UE 233 (Idaho Power Company) LC 53, Order,12-177, regarding Action Item 11 the Commission ruled that even though Idaho Power was a minority owner the Company still needed to analyze the possible costs and consequences of environmental regulations associated with the Company's partial ownership in coal plants. Staff is considering how best to respond to this lack of information.

Net metering / Distributed Generation

In the renewables section of Chapter 5, PacifiCorp states that more than 35 MW of net metering (95 percent of generators are solar) existed at year-end 2012 and that it has grown more than 33 percent from the previous year. Distributed Solar Photovoltaics (solar PV) are mentioned under the Resource Option Descriptions in Chapter 6. However, it is unclear what level of distributed solar photovoltaic resource is assumed beyond the 60 MW of new solar PV assumed from the Utah Solar Incentive Program. Staff is continuing to investigate the solar PV assumptions.

Solar - Action Item 1d. and 1e.

The Company's approach to fulfilling its solar compliance obligation through the request for proposal (RFP) process is reasonable and it helps assure that the compliance will be come at the least cost and risk. The Company reports that it plans to test the validity of the "peak load carrying capability" (PLCC) of solar and wind.[5] The Company should also plan to compare the PLCC analysis with similar "effective load carrying capability" (ELCC) methods in order to fully assess solar and wind capacity contributions to the system reliability.

Distributed Solar - Action Item 2a.

The Company intends to file an Annual Report with the Utah Public Service Commission detailing distributed solar program results and system costs and production data. Staff would also like to be provided a copy of these results by the Company. The Company identifies 7 MW of distributed solar resources in Oregon and an additional 2 MW of solar water heating potential.[6] However, the Company offers no action items in Oregon to pursue this capacity. The Company should discuss whether or not it plans to pursue development of this potential resource and, if not, should provide clear reasoning as to why this choice was made.

Carbon costs

Staff asserts that the carbon costs used by the Company are not reflective of potential futures. The Company indicates in its response to DR 9 part b that "Assigning costs to CO_2 emissions is a surrogate for a wide range of potential future policy tools, whether implemented as a tax, cap-and-trade program, emission performance standards, or some other policy mechanism." Staff is not convinced that an across-the-board carbon price is an appropriate way to estimate cost and risk from potential carbon pollution standards as describe in the president's action plan.

The implications of future EPA action are not adequately reflected in the carbon prices used in this IRP. Staff recognizes that the IRP was completed prior to the White House's announcement on regulating carbon from existing coal plants. However Staff will consider the viability of existing assumptions in light of the new information in recommending approval or not of specific action items that may affected.

Staff recognizes that forecasting carbon/CO_2 prices is different than forecasting the other inputs that factor into the decision making calculus in an IRP. Staff initially finds that the carbon prices used in PacifiCorp's IRP (i) begin later and are lower than some estimates and (ii) likely need an upward adjustment given that the President's action plan has let its intentions regarding carbon policy be known.

[5] IRP Volume I, Ch.9 p.246 Action Item 1e.
[6] IRP Volume 1, Chapter 6, page 138 Table 6.13

The Commission's IRP guideline 8 requires that IRPs examine a range of potential CO_2 regulatory costs. Staff is concerned that no PaR runs were completed using the hard cap CO_2 cases developed in the PacifiCorp IRP.

Staff is also looking at how the Company complied with IRP Guideline 8.c. regarding performing a trigger point analysis and indentifying a CO_2 compliance "turning point" scenario which would lead to the selection of a portfolio of resources that is substantially different from the preferred portfolio.[7] Staff is still evaluating the impact of potential carbon price scenarios on the selection of resource portfolios.

Risk metric

PacifiCorp has reverted to using the "risk-adjusted" stochastic mean (or PVRR) and the Upper-tail Mean less the Stochastic Mean as their primary criteria for selecting the best cost/risk portfolio(s). Staff does not support this metric. The problem with this metric is that in comparing two portfolios, one portfolio might be superior with regard to the Upper-tail Mean less the Stochastic Mean but inferior regarding the stochastic mean by itself. However, when evaluated separately, the portfolio with the smaller stochastic mean might also have the smaller Upper-tail Mean per se—rendering this portfolio simply superior overall to the other portfolio. If PacifiCorp is to persist in using those two screening criteria for some internal purpose, it should place those results in a separate appendix, with the stochastic means and Upper-tail means (possible plotted as, respectively, the abscissa and ordinate in a simple coordinates display) being the principal screening and evaluation criteria in the main body of the IRP text. This latter placement was the case in the previous IRP.

Front Office Transactions

PacifiCorp continues to rely heavily, in both the long and short runs, on third quarter front office transactions (i.e., "proxy resources, assumed to be firm, that represent procurement activity made on an annual forward basis to help the Company cover short positions." *See Vol. I, p. 155.*) In its data responses on this topic, the Company did not provide a substantive response beyond the following terse statements contained in the IRP document (*see Vol. I, p. 155*):

> To arrive at these maximum [front office transactions] quantities, PacifiCorp considered the following: Historical operational data and institutional experience with transactions at the market hubs, the Company's forward market view, including an assessment of expected physical delivery constraints and market liquidity and depth, and financial and risk management consequences associated with acquiring purchases at higher levels, such as additional credit and liquidity costs.

[7] IRP Guideline 8.c. is contained in Order No. 08-339 in UM 1302

In future IRPs, including the 2013 IRP Update, the Company should be required to provide a detailed elaboration of its "forward market view," including more analysis and justification for the Company's assumptions relative to market depth and liquidity.

Direct Access Loads

The Commission's Guideline 9: Direct Access Loads states:

> An electric utility's load-resource balance should exclude customer loads that are effectively committed to service by an alternative electricity supplier.

Consistent with its treatment of direct access under the 2010 Multi-State Protocol, "PacifiCorp [states on page 44 of Appendix B in Volume 2] that it continues to plan for load for direct access customers" (i.e., as if the load were to continue on a standard cost-of-service, retail basis). In UE 267, PacifiCorp filed a tariff allowing for permanent direct access whereby customers are permanently served by an electric service supplier and not PacifiCorp for generation services given five-year's notice. Going forward and in the next IRP, PacifiCorp will need to project future permanent direct access loads and remove such loads from system generation requirements.

Natural Gas and Electricity Prices

Staff is investigating the forecasted prices used in the Monte Carlo draws. These are not specifically included in the IRP, but are more meaningful than the prices used in System Optimizer because they determine the level and spread of the PVRR's that decide which the preferred portfolio is. Specifically, Staff is taking a closer look at how the prices at the different hubs are correlated and how gas prices and electricity prices are correlated with each other at the hub level.

Staff would recommend that going forward, the specific Monte Carlo time paths be included in the IRP document.

Staff finds that when looking at each of the Hub prices used in System Optimizer separately, the level and spread of the prices are consistent with those of other utilities, government bodies and additional third parties, but again stresses that these are not the most important forecasts.

Coal Price Forecasts

High, low and medium coal cost forecasts have a very tight dispersion over time indicating very stable coal pricing through the planning period. Although this is a reasonable forecast based on the stable history of coal prices, there may be more price variability in the future as coal-related regulatory activity increases. Also, in recent years rail transport prices have risen and both contract terms and price fluctuations have introduced more risk into coal procurement than has been typical in the past.

PacifiCorp's "high" coal forecast price is only 10 percent over the "medium" forecast after ten years (2024) and less than 20 percent higher 20 years out. In future IRPs, it would be beneficial for PacifiCorp to analyze the effect of a larger change in the coal price forecast due to the risk of uncertainty around coal mining regulation, coal transport regulation, carbon regulation, and the changing resource mix both nationally and internationally which may drastically change the worldwide demand for coal. Further, because of the expected competition between coal and natural gas for electricity generation as gas prices remain low and coal plants continue to be subject to increased pollution control regulations, PacifiCorp needs to engage in continued analysis of the economics of fuel conversion opportunities.

RPS Compliance and RECs

Page 32 of PacifiCorp 2013 IRP Volume 2, cites OPUC Order 11-2035-01. This Order states that the Company should identify the additional costs associated with addressing the non-modeled objectives cited by the Company. One such objective is compliance with Washington's Renewable Portfolio Standard (RPS). The preferred portfolio does not meet Washington's RPS. The Company's stated method of meeting the standard is to purchase Renewable Energy Certificates (RECs). The Company's analysis sufficiently demonstrates that this is an appropriate approach.

However, the IRP does not report on the expected cost of meeting this objective. Staff finds that placing no price on REC's is not sufficient for planning purposes. While REC prices are currently very low and the overall impact of purchasing REC's is currently quite small, current prices are not always indicative of future prices (if they were, there would be no need to have CO_2 in the analysis, either). Additionally, many regions of the country currently have REC prices much higher than is currently found in the Pacific Northwest. Staff would like to see additional analysis if the Company continues with this form of RPS modeling in future IRPs. First, PacifiCorp should provide an expected cost of meeting RPS requirements through RECs. Second, PacifiCorp should establish the factors causing REC price variability and provide an expected range for REC prices over time.

The PacifiCorp modeling approach relative to RPS compliance appears to be computationally intensive. Seven portfolios, C01, C02, C04, C06, C08, C10, and C12, do not satisfy state and federal RPS. The Planning and Risk results for these portfolios do not pass pre-screening because they do not satisfy state or federal RPS. Time and resource constraints limit the number of portfolios that can be thoroughly analyzed. The time spent generating non-compliant portfolios may be better spend exploring portfolios that are considered feasible.

One outcome of developing both non-RPS and RPS compliant portfolios is an estimate of the cost of complying with RPS. The costs associated with complying with RPS may be important data, however it does not appear to inform PacifiCorp's portfolio selection decision. Staff looks forward to working with the Company as they develop future IRPs on other, potentially less resource intensive ways to determine costs associated with complying with state RPS.

One final comment on RPS compliance is that until other states formally adopt a RPS requirement, PacifiCorp should revise its modeling to include an alternative that allows for all of PacifiCorp renewable resources to meet Oregon's RPS requirements. (For Washington RPS, the Company can continue to assume purchasing RECs on the market.) PacifiCorp renewable resources available to Oregon should not be limited to those resources allocated to Oregon. Oregon can compensate other states for the market value of the RECs and this could be a lower-cost alternative as evidenced by analysis conducted to date by PacifiCorp.

Transmission Expansion

Staff continues to review the following transmission-related action item acknowledged in PacifiCorp's 2011 IRP and the transmission-related action items proposed by the Company in the PacifiCorp's 2013 IRP.

- Action Item 10 from PacifiCorp's 2011 IRP
- Action Item 9a, 9b, and 9c from PacifiCorp's 2013 IRP

Load Forecast

PacifiCorp's 2013 IRP uses the same forecast as the 2013 general rate case. Staff has some methodological concerns about this forecast. A meeting between PacifiCorp and Staff is scheduled for Tuesday, September 10, 2013, to discuss this issue. Depending upon the outcome of this matter, Staff may make recommendations for changes to the load forecast methodology going forward.

PacifiCorp 2013 IRP Volume 2 page 40 summarizes PacifiCorp's efforts to comply with Oregon IRP guideline 4.b. This guideline requires analysis of high and low load growth scenarios in addition to stochastic load risk analysis. PacifiCorp generates high and low load growth portfolios using System Optimizer. These are referred to as sensitivity cases. However, these sensitivity cases were not modeled with the Planning and Risk program and the effectiveness of the portfolios is unknown. The Company should also provide its standard Monte Carlo-generated PVRR and Upper-tail Mean PVRR for these sensitivity cases.

PacifiCorp's response to OPUC DR 74 indicates that the Company has not identified the 95 percent confidence interval for load growth. This type of analysis as a standard and routine part of econometric analysis and should be done. Staff is continuing to look at how load growth is evaluated in the stochastic risk analysis and may develop recommendations for changes to modeling methodology going forward.

<u>Demand Side Management</u>

Core case C15 was developed assuming accelerated acquisition of energy efficiency resources and precluding the model from selecting a combined cycle combustion turbine (CCCT). Scenario C15 performed better than any other RPS compliant portfolio in terms of lowest cost and risk. C15 was not selected as the preferred portfolio because:

- The cost assumptions of accelerating demand side management (DSM) are uncertain;
- Ramp rates of accelerated DSM are untested; and
- The Company is reluctant to select a portfolio that excludes CCCTs.

Staff is continuing to assess the basis and merit of these assumptions.

The Company maintains that although C15 was not chosen as the preferred portfolio, specific action items were included that target accelerated acquisition of cost-effective DSM. However, Staff is concerned that PacifiCorp's 2013 IRP Action Plan includes a reduced amount of DSM from what was acknowledged in the 2011 IRP Action Plan. The current action plan calls for <u>up to</u> 1,425 to 1,876 GWh by 2016. Conversely, the previous plan called for acquiring <u>at least</u> 2,600 to 5,000 GWh by 2016 (i.e., 520 MW - 1,000 MW). This does not seem like accelerated DSM.

Staff will be looking into why 20 percent administrative costs are assigned to Oregon Class 2 DSM.

Staff is also concerned that some of the key Action Items 6 from the 2011 IRP, related to DSM, were not substantially completed, including following through on a system-wide RFP (excluding Oregon) for residential and small commercial programs and providing a review of the sufficiency of current staffing levels to deliver the Company's DSM programs.

Staff is looking into additional recommendations related to Class 1 and Class 3 DSM, irrigation load control and demand response. The 2013 IRP Action Item 7b. is a good starting point for developing demand side capacity for Oregon irrigators. However, Staff is concerned that costs of Class 1 and Class 3 DSM may be overestimated. The preferred portfolio doesn't contain any Class 3 DSM and doesn't contain any additional Class 1 DSM, including demand response, until 2027. Staff is considering how best to respond to these omissions.

PacifiCorp 2013 IRP Volume 2 page 41 summarizes PacifiCorp's efforts to comply with Oregon IRP guideline 4.e. The summary refers readers to Volume 1 Chapter 6 and Volume 2 Appendix D. These sections appear to have little discussion of anticipated technological advances. However, Oregon IRP guideline 4.e. requires the Company to take into account anticipated advances in technology. Staff recognizes that anticipating advances in technology is a complex and difficult task. Staff encourages the Company to participate in ongoing efforts by Energy Trust of Oregon to explore practical ways to potentially anticipate and quantify technological advances related to energy efficiency.

Supply Side Resource Cost

Overall the resource list appears comprehensive, including all commercially viable resource options for generation. The capital costs listed appear to be in general agreement with industry averages. The Company provided copies of the source documents for capital and operations and maintenance (O&M) cost development. Staff found no obvious discrepancies between the values used in the 2013 IRP and the source documents.

Planning and Modeling Improvements

The output of the PaR model is a reflection of the uncertainty in the stochastic input variables. It appears from the Upper-tail Mean analysis results that portfolios which include significant amounts of natural-gas fired generation also uniformly reflect greater risk according to PaR – this shows clearly in the scatter plots contained in Appendix L. In every plot, the four cases with Low Gas price assumptions (C4, C5, C8 and C9) produce PaR results with the highest Upper-tail Mean PVRR less Stochastic Mean PVRR (UTM) values.

In the IRP, this result is interpreted as the case under analysis having more risk associated with it than other cases. PacifiCorp uses this determination of "high risk" relative to the other cases to prescreen and exclude these cases from further consideration. Although on the surface this seems like a logical approach to eliminating risky portfolios, the end result is to eliminate cases that are relatively dependent on natural gas as a fuel. This, during a time natural gas prices continue to be historically low and are predicted to remain low for a foreseeable future.[8]

Staff will continue to look at implications of this effect on resource portfolio selection.

Assessment tools

Given the current landscape of multiple unknowns in terms of both quantifiable and unquantifiable risks, it is important to be able to test the economics of coal plant retrofits under multiple scenarios. Staff is considering whether the current method of calculating PVRR(d) based on system optimizer runs alone is agile enough to accomplish the type of analysis that is needed under these conditions. The system optimizer based analysis, while comprehensive and rigorous, is somewhat cumbersome, not flexible and generally not conducive to the multiple variations needed for the type of assessments needed at this time. For example Staff DR 28 asked the Company what sensitivity analysis was performed relative to the Confidential Volume III coal retirement analysis. The Company responded that there were no sensitivities performed for alternative compliance deadlines that might be contemplated under a more stringent regional haze scenario.

[8] Staff accessed the Wood Mackenzie "Northwest Gas and Power Briefing" on August 12, 2013 at www.woodmac.com.

IRP Guideline 1.d.mandates that: "The plan must be consistent with the long-run public interest as expressed in Oregon and federal energy policies." In order to ascertain compliance, it is important to be able to evaluate additional alternatives and performance of each under various future scenarios.

Public Input

Staff appreciates the Company's diligent efforts at providing information and gathering public input prior to filing this IRP. However, the coal investment analysis, which is a key part of this IRP was not made available for significant review and comment prior to the Company filing this IRP. In the future, the coal analysis needs to be more fully developed and discussed with parties prior to filing.

This concludes Staff's Opening Comments.

Dated at Salem, Oregon, this 22nd day of August, 2013

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