BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 196

In the Matter of	)
PORTLAND GENERAL ELECTRIC,	)
Application to Amortize the Boardman Deferral.	)

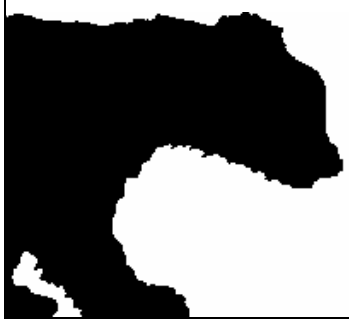
SURREBUTTAL TESTIMONY

OF THE

CITIZENS' UTILITY BOARD OF OREGON

REDACTED

June 5, 2008



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My name is Bob Jenks, and my qualifications are listed in CUB Exhibit 101.

I. Introduction

In CUB's Reply Testimony of February 20, 2008, we concluded that "PGE purchased untested, experimental technology for Boardman, yet failed to conduct significant analysis of the risks that were being incurred. PGE then failed to follow through on its plans to mitigate those risks that the Company had identified in its meager analysis." After further discovery and review, our conclusion stands.

That PGE was well aware that it was purchasing experimental technology is well documented in our Reply Testimony, and is further documented in this Surrebuttal. That PGE has no (or cannot produce any) internal Company analysis of the technology of the experimental equipment is demonstrated in this Surrebuttal. That PGE was aware of the significance of the risk of a forced outage is documented in our Reply Testimony. PGE accepted the increased risk of replacement power costs for a forced outage when the

Company chose to install, without any reasonable due diligence, experimental technology at one of its major generating facilities. As evidenced by the existence of this docket, however, PGE considers the realization of that risk, and the associated replacement power costs, to be customers' responsibility. Where PGE's analysis is wholly inadequate, customers should not be asked to bail the Company out.

II. PGE Bears The Burden To Show The Prudence Of Its Decision

1. PGE, not customers, made the decision to install experimental equipment at Boardman.
2. PGE, not customers, bears the burden of proof to demonstrate that the Company's decision at the time was prudent.
3. The default prudence judgment, based upon a minimal or absent record of the Company's analysis, should not be that the decision was prudent.
4. If the Company cannot positively establish the prudence of its decision, then the responsibility for that decision, and the resulting costs, rest with the Company.

A. Prudence Is Based On The Analysis At The Time Of The Decision

The prudence of PGE's decision to proceed with the installation of experimental technology at Boardman is one that should be based upon the Company's vantage point at the time it made the decision, not upon how circumstances eventually played out. The Company dodges this basic principle in defending its decision to proceed with the experimental upgrade.

> Subsequent to the upgrade, increased output of the plant justified the investment. Based on PGE's response to a data request, Staff notes that "customers have benefited by more than $28 million from 2001 through 2007 as a result of the upgrade and customers continue to save approximately $6.8 million annually on power costs." … These benefits

> more than offset the cost of the turbine installation and the deferral amount that is the subject of this docket.

UE 196 PGE/300/Quennoz/7.

> Under the "worst case" scenario that occurred, equipment failure and associated replacement power costs, customers still benefit from the decision to install the new low-pressure turbines even if the Commission authorizes collection of the full deferral amount that is the subject of this proceeding. Given that customers gain even under the "worst case" scenario, the expected net benefits to customers associated with the low-pressure turbine upgrade were strongly positive and the decision was prudent.

UE 196 PGE/300/Quennoz/8.

These arguments are irrelevant in determining the prudence of PGE's analysis at the time the Company made its decision. Whether or not risks materialized and/or circumstances produced a favorable outcome has no bearing upon the evaluation of the Company's initial decision. We suspect it is quite likely that, were we to make an argument that a particular investment was imprudent because it was more expensive than market purchases for the first few years, the Commission would reject that argument.

An imprudent decision might come out for the best when all is said and done, but that doesn't change the initial imprudence. We would also point out that all is NOT said and done at Boardman. In PGE's Testimony, Mr. Quennoz lists a number of measures that the Company has already taken to avoid another outage.[1] Some of these appear to be one- or two-time activities; however, others, such as retaining independent consultants and routine visual and liquid dye penetrant testing, appear to be ongoing, thus increasing costs at Boardman. Mr. Quennoz describes these activities as "operating above and beyond the industry norm."[2] Should customers be responsible for costs that are needed to

[1] UE 196 PGE/300/Quennoz/3-4.
[2] *Id.* at 4.

support a system with experimental components, when those costs are "above and beyond the industry norm?"

Further, PGE plans to install a new high-fidelity simulator at Boardman. The Company describes this as providing "training on operating and responding appropriately to a wide range of possible Boardman-specific events …"[3] This is described as part of PGE's new "Generation Excellence Initiative"; however, the fact that a simulator is now needed for Boardman-specific events, whether specifically related to the 2005-2006 Boardman outage or not, only increases the costs associated with the plant. Finally, PGE also plans to add 7 new full-time employees at Boardman in its UE 197 rate case, including an operator trainee and an assistant control operator, related to the new simulator and "other operation control room training."[4] This suggests that the cost of operating the new turbines is greater than what was originally modeled.[5]

PGE's and Staff's suggestion that outcome can justify the prudence of the initial analysis – especially given that the experimental components were only 5½ years old at the time of the failure and that there are a few more decades of outcome left to come – should not play a role in determining the prudence of the Company's initial analysis.

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[3] UE 197 PGE/400/Quennoz-Lobdell/17.

[4] *Id.* at 18.

[5] Alternatively, PGE will have to argue in its UE 197 rate case that 7 new FTEs for Boardman will add new additional benefit to customers above a prudent baseline; otherwise, these FTEs must be seen as correcting a deficiency in existing Boardman operation. In the latter case, the Commission can use PGE's staffing increase to infer that PGE understaffed Boardman which contributed to the outage. As stated by ICNU's expert witness, Mr. Martin:

"In my prior testimony, I have stated my opinion that PGE did not provide proper quality control for work performed on its facilities. The missing and loose attaching nuts described above are examples of this lack of quality control. Both PGE and Siemens should have found the missing and loose nuts in 2000, 2004, and 2005 and taken corrective action. PGE has stated that it was relying on Siemens. It is my opinion that PGE is ultimately responsible for the integrity of its facilities and cannot delegate that responsibility to Siemens. This is particularly true when the contract between PGE and Siemens relieves Siemens of responsibility for consequential damages." UE 196 ICNU/200/Martin/5.

B. PGE's Record Of Its Analysis Does Not Establish Prudence

PGE's minimal record documenting the Company's major decision at Boardman does not carry the burden of proof necessary to establish prudence in this case.

i. A Few Pages Of Financial Calculations Do Not Constitute An Analysis

The documentation of PGE's analysis that the Company has provided demonstrates only a cursory financial analysis and no meaningful technical analysis. In CUB's Reply Testimony, we state:

> In our testimony we are relying on the complete set of responses provided by PGE. In response to CUB data requests for project analyses, PGE provides a paucity of documentation. PGE provided a summary of the analysis in response to CUB DR 7(b). PGE provides only one document in response to DR 7(c) [CUB Exhibit 106], as it objects to the broad nature of the question. The question we asked pertains directly to the analysis PGE undertook to examine the risks of this investment; in the prudence phase of this docket, this is the most germane and pertinent question. If PGE will not or cannot provide evidence of its risk analysis in a prudence proceeding, it must live with the record as it stands

UE 196 CUB/100/Jenks/5/footnote 13.

CUB Exhibits 105 and 106 provide PGE's response to CUB's initial request for PGE's documentation of the Company's analysis justifying its decision to proceed with the installation at Boardman. We further pressed the Company for information and documentation after filing our Reply Testimony, specifically in CUB data requests 17 and 18, but have received little more than what was originally provided. Apparently, this is not a concern to PGE, as it states its comfort with the one-page summary of its analysis to proceed with such a major undertaking that involved experimental components:

> CUB Exhibit [105] accurately summarized the rationale behind PGE's decision to upgrade to more efficient, cost-saving turbine technology.

UE 196 PGE/300/Quennoz/7.

ii. CUB Data Request 7

In CUB data request 7, we asked PGE for:

> 7(b) Please provide the analysis (including any feasibility studies) which PGE relied upon for its decision to proceed with these upgrades; and
>
> 7(c) Please provide copies of any analyses that was provided to Enron management and/or the PGE Board of Directors regarding this upgrade.[6]

In response to requests for what we consider to be significant documentation of a major decision, PGE provided, in response to 7(b) and 7(c), six pages of documentation, one of which contained signatures and one of which contained definitions. These responses are provided as CUB Exhibits 105 and 106. In response to a request for "the analysis (including any feasibility studies) which PGE relied upon for its decision to proceed with these upgrades," PGE provided four pages of documentation.

iii. CUB Data Requests 17 & 18

In CUB data requests 17 and 18, we again asked PGE to demonstrate the analysis the Company undertook when deciding to proceed with an installation involving experimental components at Boardman:

> *Excerpt from CUB 17*: If, in fact, there are additional analyses of any sort that underlie the summaries offered in response to CUB DR 007, please provide them. Asked in the parlance of PGE's Rebuttal Testimony, please provide all due diligence documentation that PGE conducted relating to these turbine upgrades.

[6] CUB Exhibit 201. CUB data requests 17 and 18. The text of data request 7 is included as part of CUB data request 17.

> *Excerpt from CUB 18*: Please provide all documentation relating to PGE's consideration of the turbine blades and shafts that were used in the upgrade. Please describe the process by which PGE conducted due diligence regarding these components.[7]

The Company's responses to these requests were, likewise, underwhelming. Though more voluminous, the substantive content was equally deficient. Excerpts of PGE's response to CUB data request 17 are included as CUB Exhibit 202, and the Company's response to CUB data request 18 is included as CUB Exhibit 203.

iv. PGE Failed To Maintain Important Records

In PGE's responses to CUB data requests 17 and 18, the Company informs us that "The analysis supporting PGE's decision to upgrade the low pressure turbines at Boardman took place approximately 10 years ago. PGE does not generally archive files from that long ago,"[8] and "[r]elevant documents would be approximately 10 years old. In the general course of business, PGE does not retain documents that are that old."[9] Boardman is a major generating unit, and the "section of turbine shaft that cracked had a normal service life of 30 years."[10] We are not sure what PGE means by "the general course of business." However, it doesn't seem unreasonable to us for a homeowner to maintain all documentation related to the purchase, the loan, the house inspector's report, and any modifications to the property for the duration of ownership, and for a period beyond for tax and liability purposes.

v. PGE Response To CUB 17

In response to CUB data request 17, PGE provides Confidential Attachments 017-A through E, and 017 Supp 1-A.

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[7] CUB Exhibit 201. CUB data requests 17 and 18.
[8] CUB Exhibit 202. PGE response to CUB data request 17.
[9] CUB Exhibit 203. PGE response to CUB data request 18.
[10] UE 196 Staff/100/Durrenberger/8.

- Attachment A contains the one-page Capital Review Group (CRG) Project Summary and Approval provided in response to CUB 7 (Rev No: 0, provided in CUB Exhibit 105), as well as an updated Summary (Rev No: 1, provided in CUB Exhibit 202). The Attachment also includes images of a spreadsheet calculation that presumably demonstrates the numbers included in the Summaries.
- Attachment B contains an Excel spreadsheet that the Company describes as "a preliminary version of the analysis" supporting CRG Summary Rev No: 1. The Company does not have any Excel file supporting CRG Rev No: 0.
- Attachment C contains the CRG Summary Rev No: 2 for work to be performed during a 2002 planned outage (provided in CUB Exhibit 202).
- Attachment D is a brief letter discussing contractual provisions. [Not project analysis].
- Attachment E contains 58 pages of what appear to be invoices, payment releases, and a consultant cover letter with hourly billing rates. [Not project analysis].
- Attachment Supp 1-A is a one-page demonstration of the project economics [redacted], and [redacted]. No background documentation was included (provided in CUB Exhibit 202).

Attachment 017 Supp 1-A is the first glimmering of any sensitivity analysis that PGE might have considered before proceeding with the installation of experimental components at Boardman.[11] The one-page summary consists of [redacted]. The first scenario, [redacted], is most certainly something that should be considered. The second scenario, a "[redacted]," is not particularly informative. Yes, if [redacted], a more-efficient turbine would be [redacted], but, other than a [redacted], were there

[11] PGE's first supplemental response to CUB 17, which includes Attachment 017 Supp 1-A, is dated May 29th, and was probably received by CUB the following day. For a point of reference, CUB data request 7, in which we first asked for PGE's analysis, was dated January 24, 2008.

no other scenarios that PGE could envision where things might go awry? This could explain how PGE can describe the 2005-2006 outage as a "'worst case' scenario."[12] We certainly can think of scenarios far worse than this, which include premature retirement of a major generating asset due to the failure of experimental technology. Given that PGE's analysis did not consider anything beyond a [redacted], one can understand how the Company might see the 2005-2006 outage as a worst case scenario. There are scenarios that should have been considered, however, that could prove to be far worse than PGE's so-called "worst-case."

vi. Proper Due Diligence Requires Asking Questions and Answering Them

PGE did not appear to have considered the possibility that O&M costs might be greater than expected. The Company, it appears, did not, in making its decision, consider the financial implications of post-warranty equipment failure, a shorter-than-expected equipment lifetime, a greater-than-expected forced outage rate over time (to say nothing of a spectacular forced outage such as that of 2005-2006). That a [redacted] is the only misfire that PGE considered when evaluating and sensitivity-testing a considerable and risky undertaking, does not bode well for customers, on whose behalf this analysis was performed.

Most importantly, the Company did not model the risk that "[redacted]," the "[redacted]," because the Company would "[redacted]."[13] Yes, PGE had a one-year, capped liquidated damages clause, but nowhere does PGE demonstrate that this is

[12] UE 196 PGE/300/Quennoz/8.
[13] UE 196 CUB/106/Jenks/3.

an appropriate mitigation for the risk of a forced outage. PGE does not demonstrate that the risk of a forced outage is primarily a first-year risk. If forced outage isn't primarily a first-year risk and the liquidated damages clause doesn't cover past the first year, then it would seem appropriate to consider that significant risk in one's financial modeling.

Stepping back to look at the bigger picture, the analysis we would expect to see from a Company considering a major turbine upgrade with experimental components, would include the basic questions of: Where could this venture go wrong? What implications might this have for the Company and for customers? Does the projected benefit from the project as-envisioned outweigh the risks in question? And, if so, what preventative steps might we take to head off the possibility that the major risks might materialize? PGE neither asked itself these questions, nor answered them; and could not, therefore make any reasonable or prudent judgment as to whether or not to proceed.

C. Technical Analysis

The Company's response to CUB data request 18, in which we asked for documentation relating to PGE's consideration of the turbine blades and shafts that were used in the upgrade, has yet to produce any demonstration that PGE independently looked at the technology that Siemens proposed to install at Boardman. In summary, when requested for the Company's own technical analysis, the Company told us that:

- The relevant documents are approximately 10 years old.
- The response to ICNU data request 71 contains "written materials related to and drawings of the low pressure turbines installed in the 2000 upgrade." These written materials consist of the Siemens Westinghouse Illustrated Parts Catalog, approximately 200 engineering drawings of the LP turbines installed in 2000, and 25 miscellaneous documents ranging from emails to parts lists to

contract matters to financial calculations similar to and including the ones we have already discussed.

- "PGE has considerable technical information regarding the turbine, including the Siemens operations manuals for the LP turbines."
- "In the late 1990s, PGE had broad knowledge of improvements in low pressure turbine design," and " Siemens offered to install new low pressure turbines at Boardman with a minimum output guarantee."
- "Siemens did not begin detailed design work for the new Boardman low pressure turbines until the contract was signed."[14]

CUB went to PGE to inspect the "considerable technical information regarding the turbine, including the Siemens operations manuals for the LP turbines" that the Company describes in its response to CUB 18. This considerable technical information consisted of the Siemens operations manuals (4 binders) and cases of engineering drawings. We confirmed at the time, that there were no other technical materials related to the turbine upgrade, and, specifically, no materials produced internally by PGE. Nothing that the Company has produced so far includes any internal PGE technical analysis of the experimental components.

The financial analysis portrayed in PGE's response to CUB 17, however, does contain a glimpse into the Company's approach to analyzing the technical aspects of the proposed installation.

[redacted]

CUB Exhibit 105 at 3. CRG Rev No: 0.

[14] CUB Exhibit 203. PGE response to CUB data request 18.

This quote is not followed by further discussion of the technology changes involved in the new design. The Company's technical analysis implied by this quote is not updated in either CRG Rev No: 1 or CRG Rev No: 2. Without evidence to the contrary, it appears that PGE was perfectly comfortable with the technological analysis of Siemens, who, we presume, wanted to make a sale and demonstrate its new design.

D. Does The Prudence Of PGE's Initial Analysis Matter?

PGE made a choice. The Company made a choice to install experimental equipment when it did not have to. PGE made this choice, on behalf of customers, based on a cursory financial analysis and, it appears, no documented Company technical analysis. The Company's responses demonstrate a cavalier approach to a significant generation investment decision involving experimental components.

It would be inappropriate to reward PGE will full recovery in the prudence phase of this process, when the Company has completely failed to meet its burden of proof in demonstrating the prudence of its analysis. In the evidentiary record, there is now an on-going, notable absence of what should have been PGE's demonstration of the prudence of its analysis. We ask the Commission to, in its Order, specifically address the evidentiary record in this case as it relates to PGE's burden of proof to demonstrate the prudence of the Company's analysis supporting its decision to invest in experimental equipment at Boardman.

III. The Equipment Installed At Boardman Was Experimental

It is clear that Boardman was to be a testing ground for unproven technology, and it is also clear that PGE was fully aware of this.

A. PGE Rebuttal Testimony

Though PGE downplays the experimental nature of the turbine upgrades at Boardman in its Rebuttal, the Company's protestations only reinforce the conclusion that PGE chose to proceed with components that were newly-designed, not yet commercially proven, and experimental in nature.

> … LP 1 and LP 2 were the first turbines in the BB271 fleet to feature last row blades of particular size and shape. PGE anticipated that other purchasers of BB271 turbines would choose this size and shape of last-row blades, and so negotiated a $200,000 per sale rebate from Siemens for new sales of turbines with this blade configuration.

UE 196 PGE/300/Quennoz/5.

> Because those blades were modified, Siemens did agree to compensate PGE for some of the research and development costs if it sold similar turbines to other entities …

UE 196 PGE/300/Quennoz/10.

The Company's Rebuttal substantiates, though in more delicate terms, that, in exchange for being a guinea pig, PGE would receive a $200,000 rebate from each future sale of this "particular size and shape" of last row blades. Though PGE endeavors to portray the experimental nature of the Boardman installation as only "moderate,"[15] the rebate on future turbine sales as compensation for research and development costs merely substantiates the experimental nature of the endeavor.

PGE explains the contract's characterization of the turbine upgrade as "'experimental' because LP 1 and LP 2 were the first turbines in the BB271 fleet to feature last row blades of particular size and shape."[16] However, later in the Company's Testimony, Mr. Quennoz refers specifically to "wear on the last-row blades."

[15] UE 196 PGE/300/Quennoz/10.
[16] *Id.* at 5.

Q. Did PGE take any additional steps to guard against forced outages resulting [from] failure of the "experimental" last row blades?

A. Yes. After monitoring the wear on the last-row blades, PGE negotiated with Siemens to produce and retain spare blade forgings, so that PGE could quickly replace the last-row blades in the event that they failed. The last-row blades have not failed, and are still operating, but Siemens continues to hold spare blade forgings for PGE to guard against protracted outages.

UE 196 PGE/300/Quennoz/8.

The wear on the last-row blades, though the blades were still early in their operating life, caused PGE to request spare forgings. This is not a good sign.

B. The PGE & Siemens Westinghouse 1999 Contract

The very first paragraph of the 1999 turbine upgrade contract states:

ICNU/103/Martin/3. PGE & Siemens Westinghouse 1999 Contract. Emphasis added.

With regard to the experimental nature of the undertaking, Siemens Westinghouse and PGE's contract speaks for itself.

C. The Turbine Is A System, Not Isolated Components

PGE also attempts to avoid the experimental nature of the Boardman installation by pointing out that, the "last-row blades are a separate part of the LP 1 turbine and are not located at the site of crack initiation, which is on the shaft."[17] This argument suggests

[17] UE 196 PGE/300/Quennoz/6.

that each component of a turbine works in isolation, and could not, therefore, impact any other component of that turbine. Such an assertion has no grounding in common sense, and PGE provides no evidence to support it. In describing the extent of the new turbine design, ICNU's witness, John Martin, demonstrates the interconnected nature of the turbine's components.

> The new LP turbines are a totally different design in all dimensional respects. This includes the design of the rotor, all rotating blades, all stationary blades, seals, and bearings. The maximum diameter of the new rotor was increased from 100 inches on the original LP turbine to 126 inches on the new LP turbine. The weight of each new LP rotor was increased from 60,000 pounds to over 100,000 pounds. This huge increase in the weight of the turbine must be accounted for in installing the new turbine.

UE 196 ICNU/200/Martin/2.

IV. PGE Took An Unnecessary Risk In Experimental Technology

At the time PGE chose between time-tested equipment or experimental equipment for installation at Boardman, the Company chose experimental equipment, despite insufficient and/or unavailable risk mitigation measures for the potentially greatest financial risk of the project, forced outage.

A. 1-Year Liquidated Damages Clause Is Out-Of-Place In The Project Context

In PGE's analysis leading to its decision to purchase the experimental equipment at Boardman, the Company clearly states that the risk of a forced outage, of all other risks discussed, could have the "largest impact on profitability."[18] This risk was not economically modeled, however, as PGE would mitigate it via a liquidated damages clause.[19]

[18] UE 196 PGE/300/Quennoz/7.
[19] *Id.* at 7-8.

[redacted]

CUB Exhibit 106 at 3. PGE "Enron Risk Assessment And Control Deal Approval Sheet."

In its Rebuttal, PGE claims that it properly protected itself from "that"[20] risk – meaning the risk of a forced outage described in CUB's testimony – through contractual provisions which included:[21]

- A 10-year equipment warranty
  [which does not cover replacement power due to a forced outage];
- An output guarantee
  [which does not cover replacement power due to a forced outage];
- Liquidated damages in the event of equipment failure during the first year of operation (up to a ceiling amount); and
- Liquidated damages in the case of delay
  [which does not cover replacement power due to a forced outage].

So, of the four risk mitigation measures listed by PGE as addressing the risk of replacement power costs from a forced outage, only one actually applies, and that measure covered only the 1st year of operation and was capped. The only conclusion that can be drawn from this is that PGE considered it sufficient to protect itself and its customers from the largest potential risk of installing experimental equipment with a liquidated damages clause of one-year duration (for a plant with an expected useful life spanning decades). Were there reasons to believe that failure of the new components was primarily a first-year risk, then PGE properly mitigated that risk; but PGE has produced no evidence to suggest that this is the case.

[20] UE 196 PGE/300/Quennoz/7.
[21] *Id.* at 7-8.

PGE attempts to brush off the significance of the forced outage risk the Company took at Boardman by stating the obvious: "a forced outage of a generating unit is always a major risk."[22] Yes, yes it is, and when the equipment in question is experimental in nature, that risk is, by its very nature, greater. As research and development compensation was a part of the Boardman project, regardless of how minimal the Company may claim that it was, it would be difficult to reasonably argue that the forced-outage risk associated with the untested and experimental components with an unknown operating history would be the same as the forced-outage risk associated with commercially, time-tested equipment (*i.e.*, equipment that did not involve research and development compensation).

PGE's one-year risk mitigation measure for replacement power costs in the face of a forced outage of experimental equipment at one of the Company's major generating facilities is simply bizarre. Certainly, it's nice to have one year of protection, but in the context of the scale of the Boardman turbine upgrade project, the importance of Boardman in PGE's generation fleet, the expected decades-long lifetime of the project, and the inclusion of experimental components … the one-year liquidated damages clause becomes irrelevant.

B. If Risk Mitigation Measures Were Not Available, Why Did PGE Proceed?

ICNU and PGE disagree as to what risk mitigation protections were available, practical, and/or economical for the Company to have procured when installing experimental technology at Boardman. We do not address the technical aspects of this debate here, but point out that, even if one were to completely agree with the Company

[22] UE 196 PGE/300/Quennoz/7.

that such coverage was not available, not used, not affordable, or, for whatever reason, not a reasonable or prudent option,[23] it further brings into question PGE's choice to proceed with the installation of experimental equipment without having even modeled the forced outage risk. The Company clearly states that the project was:

[redacted]

UE 196 ICNU/103/Martin/3.

Therefore, faced with the choice of [redacted] at Boardman or risking the installation of experimental equipment with only a one-year liquidated damages clause as protection from the potentially greatest financial risk, PGE chose to install experimental equipment.

V. Conclusion

PGE made a decision to install experimental components at Boardman based upon cursory due diligence. Customers rely on PGE to make investments on their behalf, and the careless approach that the Company took toward such a significant capital investment, as demonstrated by the paucity of Company analysis, was not prudent. Certainly, greater efficiency is a goal worth pursuing, but PGE's choice to pursue efficiency through the installation of experimental equipment at one of its most significant generating resources – without a reasonable analysis of the range of possible financial outcomes or the technical aspects of the experimental components – demonstrates a cavalier approach to risk-tolerance, and, thereby, a cavalier approach to placing additional, long-term, and unnecessary risk onto the Company's customers.

[23] UE 196 PGE/300/Quennoz/11.

Customers should not be held responsible for PGE's failure to properly analyze and evaluate the choice to install experimental equipment at Boardman, and should not be asked to pay for the replacement power costs resulting from a failure of this experimental upgrade.

Citizens' Utility Board of Oregon

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May 1, 2008

Rates & Regulatory Affairs
Portland General Electric
121 SW Salmon St 1WTC0702
Portland, OR 97204

Re: UE 196 Data Request 16-18

Please send responses to the following data requests to Lowrey Brown at Lowrey@OregonCUB.org, or, for confidential material, at the address above. Please assume that these are on-going requests if any additional information becomes available during the pendency of the case. Answers are due within 10 days of service. If you have any questions, please call us at (503) 227-1984.

Please provide responses electronically only, and in the original electronic format.

16. Please provide the responses to ICNU's 10th set of data requests.

17. With regard to the following from PGE's Rebuttal Testimony, CUB data request 007, and the Company's response:

PGE Rebuttal Page 7:

> **Q. CUB asserts that its Exhibit 5, a one-page PGE summary document that was the basis for PGE internal approval of the low-pressure turbine upgrade, demonstrates that PGE failed to perform adequate due diligence. Is this characterization accurate?**
>
> A. No. CUB Exhibit 5 summarizes PGE's conclusions about the projected power cost savings that PGE would achieve by upgrading the LP 1 and LP 2 turbines. The summary document indicates that the expected benefits greatly outweighed expected costs. As discussed above, PGE has achieved significant power cost savings as a result of the LP 1 and LP 2 upgrade. CUB Exhibit 5 accurately summarized the rationale behind PGE's decision to upgrade to more efficient, cost-saving turbine technology.

continued…

Below is the entirety of CUB 007 and PGE's written responses (attachments excluded):

Request:

With regards to the 2000 Turbine upgrades (the installation of LP1 and LP2):

a. **When did PGE make the decision to proceed with these upgrades?**
b. **Please provide the analysis (including any feasibility studies) which PGE relied upon for its decision to proceed with these upgrades**
c. **Please provide copies of any analyses that was provided to Enron management and/or the PGE Board of Directors regarding this upgrade.**
d. **Please provide a copy of PGE's testimony and work papers from UE 115 which discussed this turbine upgrade.**

Response:

a. **When did PGE make the decision to proceed with these upgrades?**

   PGE decided to proceed with the low-pressure turbine upgrades in Fall 1998. See PGE's response to part b. below.

b. **Please provide the analysis (including any feasibility studies) which PGE relied upon for its decision to proceed with these upgrades.**

   Attachment 007-A is a copy of the approved final capital review group document for the upgrades. This document summarizes the analysis that was the basis for decision**.** Attachment 007-A is confidential and subject to Protective Order No. 07-433. It is provided under separate cover.

c. **Please provide copies of any analyses that was provided to Enron management and/or the PGE Board of Directors regarding this upgrade.**

   PGE objects to this request because it is overly broad and unduly burdensome. Without waiving objection, PGE responds as follows:

   Attachment 007-B is a copy of the Enron approval document. This attachment is confidential and subject to Protective Order No. 07-433. It is provided under separate cover.

d. **Please provide a copy of PGE's testimony and work papers from UE 115 which discussed this turbine upgrade.**

   PGE objects to this request because CUB already has this material. Without waiving objection, PGE responds as follows:

   Attachment 007-C contains relevant pages from PGE's UE 115 testimony.

continued…

In Testimony, CUB included as exhibits the entirety of PGE's response to CUB DR 007, including the attachments (CUB 105 and CUB 106). In the Company's Rebuttal Testimony, PGE now states that these Exhibits are only summaries, and implies that other due diligence was conducted. However, CUB asked for all analyses in its initial data request. If, in fact, there are additional analyses of any sort that underlie the summaries offered in response to CUB DR 007, please provide them. Asked in the parlance of PGE's Rebuttal Testimony, please provide all due diligence documentation that PGE conducted relating to these turbine upgrades.

18. With regard to the following from PGE's Rebuttal Testimony:

On page 5 of Rebuttal Testimony, PGE states:

> A. The contract characterized the turbines as "experimental" because LP 1 and LP 2 were the first turbines in the BB271 fleet to feature last row blades of particular size and shape. PGE anticipated that other purchasers of BB271 turbines would choose this size and shape of last-row blades, and so negotiated a $200,000 per sale rebate from Siemens for new sales of turbines with this blade configuration.

And on page 6 of Rebuttal Testimony, PGE states:

> A. No. Other than the last-row blades, the only other significant upgrade to the turbines was a switch from non-ruggedized to ruggedized shafts. Ruggedized shafts are an industry norm and were common in low-pressure steam turbines at the time of the upgrade.

Please provide all documentation relating to PGE's consideration of the turbine blades and shafts that were used in the upgrade. Please describe the process by which PGE conducted due diligence regarding these components.

May 15, 2008

TO: Lowrey Brown
Citizens' Utility Board

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 196
PGE Response to CUB Data Request
Dated May 1, 2008
Question No. 017

Request:

The text of CUB's request is deleted here for brevity but is included in CUB Exhibit 201.

Response:

PGE objects to this request because it is overly broad and unduly burdensome. Without waiving its objection, PGE responds as follows:

The analysis supporting PGE's decision to upgrade the low pressure turbines at Boardman took place approximately 10 years ago. PGE does not generally archive files from that long ago. However, Attachment 017-A contains the following material:

- October 26, 1998, Capital Review Group (CRG) Project Summary and Approval. This was also provided as part of PGE's Response to ICNU Data Request No. 038.

- Pdf copy of spreadsheet analysis that supports the October 26, 1998, CRG Project Summary and Approval. (We do not have the Excel file.)

- March 16, 1999, CRG Project Summary and Approval. This was for a revision to the low pressure turbine cost estimate.

- Pdf copy of spreadsheet analysis that supports the March 16, 1999 CRG Project Summary and Approval.

Attachment 017-B contains an Excel file with a preliminary version of the analysis that supported the March 16, 1999 CRG Project Summary and Approval.

Attachment 017-C contains the February 5, 2001, CRG Project Summary and Approval. This was for a second revision primarily focused on tilt pad bearings and duplex filters to be installed during the 2002 planned outage.

Attachment 018-D is a letter from PGE to Siemens that discusses certain contractual provisions. PGE successfully negotiated inclusion of these provisions in the final contract with Siemens.

Attachment 018-E contains material related to PGE hiring Stone & Webster as a consulting engineering firm to provide help to PGE during the performance testing of the low pressure turbines.

Attachments 017-A, 017-B, 017-C, 017-D, and 017-E are confidential and subject to the protective order in this docket (Order No. 07-433).

PGE has considerable technical information regarding the turbine, including the Siemens operations manuals for the LP turbines. These materials are voluminous and it is PGE's understanding that technical information is not the focus of this request. However, PGE will, upon request, make them available for CUB to review as confidential material subject to the protective order in this docket.

⇨ **CUB Exhibit 202, pages 3-7 are confidential and subject to protective order.**

May 29, 2008

TO: Lowrey Brown
Citizens' Utility Board

FROM: Randy Dahlgren
Director, Regulatory Policy & Affairs

PORTLAND GENERAL ELECTRIC
UE 196
PGE's *First Supplemental* Response to CUB Data Request
Dated May 1, 2008
Question No. 018

Request:

The text of CUB's request is deleted here for brevity but is included in CUB Exhibit 201.

Response (May 15, 2008):

PGE objects to this request because it is overly broad and unduly burdensome. Without waiving its objections, PGE responds as follows:

Relevant documents would be approximately 10 years old. In the general course of business, PGE does not retain documents that are that old. The attachments to PGE's Response to ICNU Data Request No. 071 contain written materials related to and drawings of the low pressure turbines installed in the 2000 upgrade. PGE is providing this response in PGE's Response to CUB Data Request No. 016.

PGE's Response to CUB Data Request No. 017 provides documentation on PGE's consideration of the expected financial results of the low pressure turbine upgrade.

PGE has considerable technical information regarding the turbine, including the Siemens operations manuals for the LP turbines. These materials are voluminous and it is PGE's understanding that technical information is not the focus of this request. However, PGE will, upon request, make the materials available for CUB to review as confidential material subject to the protective order in this docket.

First Supplemental Response (May 29, 2008):

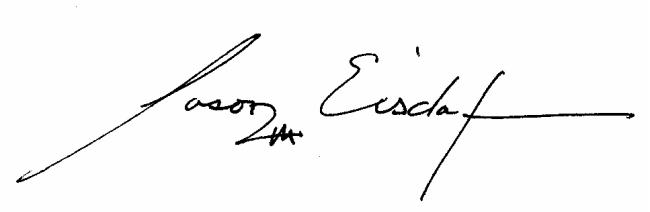
As a result of further conversations with CUB, PGE submits this supplemental response. In the late 1990s, PGE had broad knowledge of improvements in low pressure turbine design. After discussions and negotiations, Siemens offered to install new low pressure turbines at Boardman with a minimum output guarantee. Given this output guarantee, PGE's financial analysis indicated that the purchase of new low pressure turbines from Siemens would be very cost-effective. The portion of the financial analysis from approximately 10 years ago that PGE has been able to locate was provided in PGE's Response to CUB Data Request No. 017.

Siemens did not begin detailed design work for the new Boardman low pressure turbines until the contract was signed. This is standard industry practice because design work is expensive, and original equipment manufacturers will not do it for a specific plant until a contract is signed. Therefore, no detailed design information was available for PGE to consider prior to signing the contract. PGE searched for, but did not find any less detailed design documents that were part of our evaluation process prior to the contract signature date.

CERTIFICATE OF SERVICE

I hereby certify that on this 5th day of June 2008, I served the foregoing Surrebuttal Testimony of the Citizens' Utility Board of Oregon in docket UE 196 upon each party listed below, by sending a non-confidential version via email and, where paper service is not waived, by U.S. mail, postage prepaid, and by sending a confidential version to the appropriate parties as identified on the service list by U.S. mail, postage prepaid, and upon the Commission by emailing a non-confidential version and by sending 6 confidential copies by U.S. mail, postage prepaid, to the Commission's Salem offices.

Respectfully submitted,



Jason Eisdorfer Attorney #92292
The Citizens' Utility Board of Oregon

W=Waive Paper service, C=Confidential, HC=Highly Confidential

PORTLAND GENERAL ELECTRIC

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