From:	David Johnson
To:	UTC DL Records Center
Subject:	Comments to PSE"s 2017 IRP Overview -- Dockets UE-160918 and UG-160919
Date:	Thursday, February 22, 2018 12:48:39 PM
Attachments:	CommentsLetter.pdf IRPComments.pdf ResponseIRPOverview.pdf

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Hello,

Enclosed for filing are my comments to PSE's 2017 IRP Overview. Also enclosed is an attachment to the comments and a letter to Mr. King.

Thank you for your assistance.

Sincerely,

David S. Johnson

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Bainbridge Island, WA 98110

February 22, 2018

Steven V. King
Executive Director and Secretary
Washington Utilities and Transportation Commission
1300 S. Evergreen Park Dr. S.W.
P.O. Box 47250
Olympia, WA 98504-7250

Re: Puget Sound Energy, Inc.'s 2017 IRP Overview
Dockets UE-160918 and UG-160919

Dear Mr. King:

Enclosed for filing are my comments to Puget Sound Energy, Inc.'s 2017 IRP Overview (filed on February 15). Also enclosed is an attachment to the comments.

Sincerely,

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Enclosures

COMMENTS TO PSE'S 2017 INTEGRATED RESOURCE PLAN
(DOCKETS UE-160918 AND UG-160919)

In August 2017, PSE's witness, Ronald Roberts, submitted testimony in Docket UE-170033. He reviewed PSE's decision to retire the Colstrip 1 & 2 units by July 1, 2022.

Mr. Roberts testified: "PSE considered the Clean Power Plan compliance requirements (since stayed) when considering retirement dates for Colstrip Units 1 & 2." He said these requirements are also "pertinent to Colstrip Units 3 & 4." He added: "Moreover, there have been numerous proposals to implement carbon pricing in Washington, and PSE must continue to be vigilant in its evaluation of the value of Colstrip Units 3 & 4 in light of these changing circumstances."[1]

PSE filed its IRP shortly thereafter. After discussing the Clean Power Plan, the company made a persuasive case for retiring Colstrip 3 & 4 in 2025:

- "Federal CPP regulations are scheduled to take effect in 2022. These rules apply carbon costs to existing and new baseload electric generating facilities throughout the country."[2]

- "In the Base Scenario, in which the CPP adds a CO2 price that affects the dispatch cost of the plant starting in 2022, retiring Colstrip 3 & 4 in 2025 would lower portfolio costs. Under these conditions, the power plant has a greatly reduced capacity factor and is not able to recover the cost of operating."[3]

- Retiring Colstrip in 2025 would reduce portfolio costs by $149 million.[4]

- Retiring Colstrip in 2025 would reduce emissions by 1 to 5 million tons per year.[5]

- "…[T]he early Colstrip 3 & 4 retirement [in 2025] shows the cost per ton [of emissions reductions] is about equivalent to adding 300 MW of solar, but the potential carbon savings is much greater."[6]

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1 Docket UE-170033, Exhibit RJR-30T at p. 3 l. 22-24; p. 4 l. 19-22; and p. 5 l. 3-9.

2 IRP at p. 4-15.

3 IRP at p. 6-52.

4 IRP at Figure 6-25.

5 Appendix N to IRP at Figure N-143.

6 IRP at p. 6-86 (discussing Figure 6-52).

These facts are compelling. Customers benefit from reduced portfolio costs, and all of us benefit from significant and cost-effective reductions in carbon emissions. This is a win-win outcome — if PSE does retire Colstrip 3 & 4 in 2025.

But that's not what PSE plans to do. The company intends to rely on Colstrip 3 & 4 for capacity and energy through 2035[7] — despite the substantial benefits that result if the units are retired ten years earlier. The arguments for this extended delay don't hold up. PSE should therefore redo the IRP and assume 2025, not 2035, as the expected retirement year for the units.

1. Carbon Regulation Will Occur During The Planning Period.

In an October 2017 presentation to its IRPAG, PSE said the IRP assumes continued operation of Colstrip 3 & 4 because "policy makers have not developed or implemented the regulations in 'Base Case' that render the plant uneconomic."[8]

This logic is baffling. Per the CPP, the IRP's Base Scenario adds a carbon price to Colstrip 3 & 4 — scheduled in 2022 — that greatly reduces the units' capacity factor and prevents them from recovering their operating costs. These impacts occur long before the planning period ends. Yet PSE dismisses these impacts because "policy makers have not implemented the [CPP]."[9]

The point is not whether the CPP had been implemented when PSE filed the IRP. The point is whether the CPP or similar carbon regulation will be implemented during the planning period. PSE concedes this is likely:

- "While implementation in the short term is uncertain, it is still possible (and likely) that some form of the CPP could be implemented during the 20-year planning horizon of this IRP."[10]

- "PSE's Base Case assumes that federal CPP rules will supersede state CAR regulations in 2022. Even if CAR and CPP are ultimately not implemented, some form of carbon regulation is likely to be enacted during the 20-year period covered in this IRP, so it is important that the analysis reflect this possibility."[11]

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[7] IRP at p. 1-12 (citing 2035 as the expected retirement year for Colstrip 3 & 4) and Figures 1-1 and 1-2 (showing capacity and energy from Colstrip 3 & 4 through 2035).

[8] The IRPAG presentation is available at https://pse.com/aboutpse/EnergySupply/Documents/03_PSE_2017_IRPAG_October_5_2017.pdf. The quoted statement appears at p. 24.

[9] The U.S. Supreme Court stayed the CPP pending disposition of review petitions in a lower court.

[10] IRP at p. 3-3.

[11] IRP at p. 4-15.

As Mr. Roberts testified, PSE considered the CPP when it decided to retire Colstrip 1 & 2 by July 2022. He said this law is equally pertinent to Colstrip 3 & 4. So why does PSE assume away the law in setting a retirement date for the latter units? And why does PSE assume away carbon costs that, under the CPP, are scheduled to take effect 15 years before the planning period ends?

Mr. Roberts further testified that carbon pricing proposals in Washington State will influence the planning for Colstrip 3 & 4. One such proposal is SB 6203, which the State Senate passed out of committee on February 1, 2018. Momentum is building for state carbon regulation — regulation that is "likely to be enacted," as PSE concedes, and that will "challenge [Colstrip's] continued economic operation."[12] Yet PSE still assumes Colstrip 3 & 4 will operate for 17 more years.

2. Future Dispatch Of Colstrip 3 & 4 Will Be Problematic At Best.

In the IRP, PSE suggests another reason to continue Colstrip 3 & 4 operation: "From 2022 through 2034, direct emissions rise as natural gas prices increase relative to coal costs, causing the economic dispatch of Colstrip 3 & 4 to increase despite the WECC-wide carbon price."[13]

Other forecasts are less sanguine about coal:

- "Prices for natural gas have dropped significantly since reaching a high in 2008, and they're expected to remain relatively low going forward."[14]

- "…[N]atural gas is now generally cheaper to extract and transport than coal. The development of a cheaper and more readily available energy source has sharply driven down the price of energy. In fact, the price has fallen below the profit margin of producing coal at many older plants. The effect of cheap natural gas driving energy prices down to an unprofitable level has been the topic of news stories."[15]

Further, it's difficult to reconcile the IRP claim with PSE's statement that a carbon price will challenge Colstrip economics, greatly reduce the capacity factor, and prevent the 3 & 4 units from recovering operating costs. And it's difficult to reconcile that claim with PSE's statement that a retirement in 2025, rather than 2035, will reduce portfolio costs by $149 million.

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[12] IRP at pp. 1-5 and 4-15; *see also* IRP at p. 1-21 (carbon price on coal "significantly curtails the economic dispatch of Colstrip 3 & 4") and p. 6-30 ("carbon regulation that adds dispatch cost will challenge the economics of Colstrip").

[13] IRP at p. 1-21. PSE probably meant 2035 rather than 2034 (to be consistent with Figures 1-1 and 1-2).

[14] Northwest Conservation and Electric Seventh Power Plan (February 2016) at p. 1-5; *see also* IRP at Figure 4-11 (showing a significant decline in natural gas prices since PSE's 2009 IRP).

[15] Docket UE-170033, Exhibit RJR-1CT at p. 22 l. 5-10 (Ronald Roberts testimony on behalf of PSE).

Nor does PSE provide data to back up its claim. The company estimates $4.02 per MMBtu as the levelized base gas price, i.e., the expected price over the planning period. PSE then adds $3.11 per MMBtu to account for the carbon price that the Base Scenario assumes.[16] But how does the levelized base gas price compare to the projected costs for Colstrip coal supply? And how does the levelized carbon price on gas compare to the carbon price on this coal supply?

The IRP doesn't answer these critical questions. PSE says only that it's "currently in negotiations" to extend the coal supply agreement for Colstrip 3 & 4 beyond 2019, and that the agreement terms are "protected under contractual confidentiality language."[17] Further, PSE refuses to provide costs for post-2019 Colstrip coal supply. PSE claims these costs are "speculative."[18]

What we do know is that future dispatch of Colstrip 3 & 4 will be problematic at best. Due to higher emission levels,[19] the carbon price on coal will greatly exceed the carbon price on gas. And this differential will increase if PSE models, as it should, the societal cost of carbon rather than direct emissions alone. The company argues that the "societal cost of carbon does not fit this regulatory model." But Commission Staff and other regulatory commissions disagree.[20]

3. The Rationale For A 2035 Retirement No Longer Exists.

PSE assumes that Colstrip 3 & 4 will provide capacity and energy through 2035. For the last two years of the planning period, however (2036 and 2037), the IRP shows zero capacity and energy from these units — because PSE intends to retire them the year before. But why? Why retire Colstrip 3 & 4 in 2035 if the units can still provide economic dispatch?

The answer is simple. The retirement year that PSE assumes has nothing to do with economic dispatch. Most likely, PSE set 2035 as the retirement year due to an accounting proposal in its last rate case — a proposal the company has since abandoned.

In that case, PSE's witness, John Spanos, proposed to use 2035 as an end-of-life year in order to calculate depreciation expense for Colstrip 3 & 4. He arrived at 2035 by splitting the difference

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16 IRP at Figure 4-11.

17 IRP at p. K-10.

18 Docket UE-170033, Exhibit EDH-7 at p. 10 (PSE objection to Sierra Club data request).

19 Northwest Conservation and Electric Seventh Power Plan (February 2016) at p. 9-19 ("natural gas has half of the carbon dioxide emissions of coal"); Docket UE-170033, Exhibit RJR-1CT at p. 21 l. 16 ("coal emits approximately 30% more greenhouse gases than natural gas").

20 IRP at p. 4-16; Staff's Comments to IRP (February 6, 2018), Appendix 1 at p. 8 ("[PSE's] regulatory interpretation is misleading and incomplete…The societal cost of carbon is nationally recognized and a widely used approach to quantify the very risks identified in the IRP rule").

between the end-of-life years PSE had proposed in an earlier rate case (2024 and 2025 for Colstrip 3 & 4, respectively) and the years PSE agreed to in settling that case (2044 and 2045).[21]

Mr. Spanos filed his proposal in early 2017. Later that year, PSE revised the IRP materials (as well as the draft and final IRP) to reflect 2035 as the retirement year for Colstrip 3 & 4. The company had previously said these units would operate through the planning period, i.e., through 2037. But in August 2017, PSE told the IRPAG it would retire the units two years earlier, in 2035 — apparently to conform the IRP to Mr. Spanos's proposal.[22]

Since then, PSE has abandoned 2035 as the end point for depreciation. In a settlement, PSE agreed to use 2027 as the end-of-life year for Colstrip 3 & 4. The Commission approved the settlement and said the "selection of a 2027 date appears to be a reasonable compromise."[23]

This means that the rationale for a 2035 retirement no longer exists. PSE agreed to move up the accounting end-of-life year to 2027. Why not move up the actual retirement year, too? This would make the IRP consistent with the rate case settlement and the end of Colstrip 3 & 4 for accounting purposes. It would also allow PSE and its customers to realize the multiple benefits from an accelerated retirement.

A precise match between end-of-life and retirement years would close Colstrip 3 & 4 in 2027, not 2025. PPS could always choose to do this. The advantage of a 2025 closure, however, is that PSE has already studied and quantified the benefits from a retirement that year. Those benefits peak in 2025 and go down with each additional year of operation.[24] That's why 2025 is the optimal retirement year for Colstrip 3 & 4.

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[21] Docket UE-170033, Exhibit JJS-1T at pp. 8-9.

[22] The 2035 retirement year first appears in a presentation titled "Portfolio Analysis Draft Electric Results," at pp. 30, 34, and 45. This presentation is available at https://pse.com/aboutpse/EnergySupply/Documents/01_PSE_2017_IRPAG_DRAFT_August%2011_2017_UPDATED.pdf. Earlier presentations had all asserted that Colstrip 3 & 4 would operate through the planning period.

[23] Docket UE-170033, Order 08 at p. 48 n. 148.

[24] IRP at Figure 6-25 (a 2025 retirement yields $149 million in cost savings, whereas a 2030 retirement yields $82 million in savings).

COMMENTS TO PSE'S IRP OVERVIEW
(DOCKETS UE-160918 AND UG-160919)

I filed comments to PSE's IRP on February 12 (see attached). I responded to PSE's assertion, in the Base Scenario, that Colstrip 3 & 4 will serve as a supply resource for the utility through 2035. For several reasons, this projected end date is far too distant. PSE should stop taking energy and capacity from the units by 2025, not 2035.

Last week, PSE filed an IRP Overview. Regrettably, the Overview omits key facts — facts that bear directly on the end date for Colstrip 3 & 4.

Challenged Economics

The Overview states at p. 2: "Carbon regulation may adversely affect economics of Colstrip 3 & 4 continued operation." And again at p. 18: "Placing a carbon price on plant dispatch could adversely affect the plant economics to where it would be more cost effective to replace it with other resources."

These are equivocal statements. But the IRP isn't equivocal at all. In that document, PSE is crystal clear about the likelihood and impact of carbon regulation, long before the planning period ends:

- "[S]ome form of carbon regulation is likely to be enacted during the 20-year period covered in this IRP."[1]
- The Base Scenario assumes a carbon price on coal that "significantly curtails the economic dispatch of Colstrip 3 & 4."[2]
- The Base Scenario assumes that, starting in 2022, Colstrip 3 & 4 will have a "greatly reduced capacity factor and would not be able to recover the cost of operating."[3]
- "A carbon regulation policy that adds to the dispatch cost of Colstrip would challenge its continued economic operation."[4]

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1 IRP at p. 4-15.

2 IRP at p. 1-21.

3 IRP at p. 6-52.

4 IRP at p. 1-5.

In other words, the IRP draws a straight line from likely carbon regulation, to assumed carbon pricing, to a reduced capacity factor, and ultimately to a challenged economic operation for Colstrip 3 & 4. Under the Base Scenario, moreover, the units fail to recover their operating costs once the assumed carbon pricing takes effect (in 2022). Yet despite this overwhelming evidence, PSE claims the units should operate long after 2022. This makes no sense at all.

The End Date

The Overview assumes at p. 6 that PSE will take energy and capacity from Colstrip 3 & 4 through 2035. This projected end date is consistent with the IRP. But unlike the IRP, the Overview fails to list any of the benefits that accrue from an end date ten years earlier.

These benefits fall into three main categories:

- A 2025 end date causes $149 million in portfolio cost savings. The savings peak that year and go down with each additional year of operation.[5]

- A 2025 end date reduces emissions by 1 to 5 million tons per year.[6]

- A 2025 end date is equivalent in cost to adding 300 MW of solar, but with significantly greater carbon savings.[7]

PSE developed these numbers in its analysis. They're important to the company's future supply portfolio. So why doesn't the Overview include them? As written, the Overview creates a critical misimpression — that a 2035 end date is essentially a *fait accompli* because no other date is better. This couldn't be further from the truth.[8]

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[5] IRP at Figure 6-25 (2025 end date causes $149 million in savings, whereas a 2030 end date causes $82 million in savings) and p. 6-52 ("In the Base Scenario, in which the CPP adds a CO2 price that affects the dispatch cost of the plant starting in 2022, retiring Colstrip 3 & 4 in 2025 would lower portfolio costs").

[6] IRP at Figure N-143 (showing declines in emissions through the remainder of the planning period).

[7] IRP at p. 6-86 (discussing the carbon abatement curve, Figure 6-52).

[8] In my comments to the IRP itself, at pp. 4-5, I discussed why 2035 is an artificial end date, tied only to an accounting proposal PSE made in its last rate case — a proposal the company abandoned when it agreed to settle that case.