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Reply Comments

To: Public Service Commission of Utah

From: Utah Division of Public Utilities

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Artie Powell, Manager
Doug Wheelwright, Utility Technical Consultant Supervisor
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Date: April 7, 2022

Re: **Docket No. 21-035-09,** PacifiCorp's 2021 Integrated Resource Plan

Reply Comments

The Utah Division of Public Utilities (Division) presents these Reply Comments regarding Rocky Mountain Power's 2021 Integrated Resource Plan (2021 IRP).

Discussion

There Is Broad Agreement Regarding the Need for More Details on the Natrium Plant

There is broad agreement regarding the need for further information on the Natrium project before the project can be properly evaluated in the IRP process. Not all parties addressed the issue of the Natrium project costs, but no party expressed support for the Natrium modeling inputs, and all parties who addressed the issue of Natrium projects costs in any detail opposed the inclusion of the Natrium project in the preferred portfolio until more detail is known.

Interwest Energy Alliance stated that the Commission should require the Company to "optimize portfolios based on known costs and risks, rather than assume the inclusion of resources with unknown costs and risks, such as non-emitting peaking units, carbon capture and sequestration, and small modular reactors in any future portfolios."[1]

Utah Clean Energy (UCE) concluded: "There are too many uncertain variables and inputs regarding the Natrium nuclear plant to model this resource on a consistent and comparable basis in this IRP."[2] UCE noted that the Natrium project was not included in the supply-side table, and also noted that there are many unknowns about the project, including the source of the HALEU fuel to be used, the final maximum costs that ratepayers would pay, and how delays will be handled.[3] UCE concluded that the resource selection of the Natrium project should not be acknowledged.[4]

The Utah Association of Energy Users (UAE) concludes that "the Commission should decline to acknowledge the portion of the IRP that relates to the Natrium project."[5] UAE comes to many of the same conclusions as the Division. UAE notes that most costs in the supply-side research table "are determined based on the known capabilities of mature technologies and existing equipment," on third-party reports, or on actual 2020 AS RFP prices. In contrast, the Natrium costs are confidential and speculative.[6]

Salt Lake City (SLC) states that there are no commercial fast sodium reactors in operation in the U.S., and that these facts "do little to suggest that a first-of-its-kind Natrium™ demonstration project could be licensed, constructed, and online by 2028."[7] SLC also states that "…preferred portfolios that rely on unlicensed or non-commercial technologies—especially in the first half of the 20-year plan—lose credibility when offered as 'least-cost and least-risk' approaches to energy planning."[8]

[1] Initial Comments of the Interwest Energy Alliance, Docket No: 21-035-09, March 4, 2022 (Interwest Initial Comments), p. 5.
[2] Comments from Utah Clean Energy, Docket No: 21-035-09, March 4, 2022 (UCE Initial Comments), p. 6.
[3] UCE Initial Comments, pp. 6-7.
[4] *Id.* p. 8.
[5] Comments of the Utah Association of Energy Users, Docket No: 21-035-09, March 4, 2022 (UAE Initial Comments), p. 4.
[6] UAE Initial Comments, p. 3 (footnotes omitted).
[7] Public Comments from Salt Lake City Corporation (SLC Initial Public Comments), Docket No: 21-035-09, March 4, 2022, pp. 1-2. Salt Lake City petitioned to intervene after its Initial Public Comments were filed.
[8] SLC Initial Public Comments, p. 3.

The Sierra Club states that "PacifiCorp's expectation that it will receive power from a novel nuclear technology by 2028 may be unrealistic and introduces substantial cost and execution risks that are not adequately addressed in the IRP."[9] They recommend that the Natrium project should not be acknowledged until more details are available regarding costs, risks, and possible delays.

The Office of Consumer Services (OCS) opposed the inclusion of the Natrium project in the preferred portfolio, based on the inclusion of the nascent Natrium technology and unknown non-emitting peaker plant technology, while excluding new natural gas resources.[10] The OCS and the Division agree that the Natrium project should not be included in the preferred portfolio, given the uncertainties around cost, fuel supply, federal permitting, and possible delays. The Division agrees with the OCS that "the Natrium technology is unable to be adequately compared to other known resources that have a history of successful construction and operation."[11]

Every party that had substantive comments about the Natrium plant stated variations on similar themes. The Division agrees with the broad contours of the comments mentioned in this section. There are too many unknowns about costs, risks, and possible delays to include the Natrium project in the preferred portfolio.

HALEU Fuel

Several parties discussed the uncertainties around the manufacture of the HALEU fuel to be used by the Natrium plant.[12] UCE noted that the only current source for HALEU purchase is Russia.[13] TerraPower has recently stated that it will not use Russian uranium for the

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[9] Sierra Club's Opening Comments, Docket No: 21-035-09, March 4, 2022 (Sierra Club Initial Comments), p. 6.
[10] Comments from the Office of Consumer Services, Docket No: 21-035-09, March 4, 2022 (OCS Initial Comments), p. 1.
[11] OCS Initial Comments, p. 5.
[12] *See, e.g.*, Division Initial Comments, pp. 27-29; OCS Initial Comments pp 7-8; UCE Initial Comments, pp. 6-7.
[13] UCE Initial Comments, p. 7, note 15 (citing an article at https://www.hlnewnuclear.com/2022/01/haleu-developments-overview-of-the-issue-recent-nei-white-paper-and-nrc-staff-rulemaking-request/).

Natrium reactor, due to Russia's invasion of Ukraine. A recent article on this issue came out after initial comments were submitted; the article stated:[14]

> The U.S. imports nearly all of the uranium it uses to generate nuclear power. Advanced reactors like TerraPower's require a more highly enriched fuel that, at present, is only sold by a state-owned Russian company. It didn't look like the U.S. would be able to establish its own fuel supply by the plant's 2028 operating deadline. Until that supply chain was in place, TerraPower had no choice but to get its fuel from Russia.
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> …
>
> According to Jeff Navin, TerraPower's director of external affairs, Russian fuel is no longer an option, regardless of what lawmakers do. Not even for that first plant.
>
> "We have stopped any and all conversations with the Russians," Navin said. "We have no interest in re-engaging with the Russians. We are putting all of our efforts into trying to figure out how to get a domestic supply chain stood up as quickly as possible."
>
> …
>
> Turning its back on Russia leaves TerraPower with six years to secure another supplier.
>
> "Two months ago, I could have told you our plan to get our first core load," Navin said. "Today, I can't. So it's certainly introducing a little more uncertainty into the project."
>
> There's exactly one U.S. enrichment facility authorized to make the fuel TerraPower needs: a nearly operational Ohio demonstration plant, owned by nuclear fuel supplier Centrus Energy, that will be able to produce about 900 kilograms per year.
>
> Combined, the first core loads of the two nuclear plants scheduled to start up by 2028 require nearly 20 times that volume.

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[14] *TerraPower says it won't use Russian uranium in its Wyoming reactor, Nicole Pollack, Casper Star-Tribune*, March 21, 2022, available at: https://columbustelegram.com/news/state-and-regional/terrapower-says-it-wont-use-russian-uranium-in-its-wyoming-reactor/article_6c972312-0d80-562c-a55f-5285aae1629b.html

The HALEU fuel supply situation is even more tenuous than when initial IRP comments were submitted. The Division reiterates that the Natrium plant should not be in the preferred portfolio, since a reliable fuel supply has not been determined.

The OCS and the Division Agree that Certain Standards and Guidelines Were Not Met

The Division notes that the OCS independently arrived at the same or similar conclusions as the Division with respect to the Commission's Standards & Guidelines. The OCS recommended that the Commission not acknowledge PacifiCorp's 2021 IRP, while the Division recommended partial acknowledgment.[15] The OCS also made similar findings to those of the Division with respect to inadequate and limited opportunity for stakeholder feedback in the IRP process. The OCS and the Division both recommend that the Company assign more resources to the IRP going forward.

The Division's analysis supports the OCS findings with respect to Company's inadequate justification for excluding new natural gas-fired resources in the Company's portfolio selection process. The Division and OCS both note that the reason no gas resources were bid into the 2020 All Source RFP is because the Company signaled to the market in its 2019 IRP Action Plan and the RFP itself that it was planning for solar, wind, and battery resources.[16]

The OCS filed stakeholder comments in the IRP process that the Company answered unsatisfactorily, both in stakeholder feedback and in the IRP itself. The OCS stated that the Company has not complied with Standard & Guideline 4(g): the OCS requested that the Company perform a customer rate impact analysis in its 2019 IRP Comments, in its 2021 IRP stakeholder feedback comments, and in its initial comments in the present docket. The Division believes the OCS's request is reasonable and that the Company response has been inadequate; the requested information should be provided in this IRP and in future IRPs. The Division requests that the Commission require the Company to file the appropriate customer rate impact analysis per Guideline 4(g).

[15] OCS Initial Comments, p. 1; Division Initial Comments pp 1-3.
[16] Division Initial Comments, p. 39; OCS Initial Comments, p. 8.

The Division also agrees that the IRP has violated Guidelines 1, 4(b), 4(b)(ii), and 4(h) with respect to the Natrium project and the inclusion of the hypothetical non-emitting peakers, while excluding new natural gas resources.[17] The Division's independent findings support the OCS's conclusion that the 2021 Preferred Portfolio contains a resource mix that is unsupported and that carries unacceptable risk for Utah customers.[18] The OCS indicated that they do not object to the following:

> PacifiCorp exploring the possibility of adding a Natrium nuclear reactor to its system as a "one-off" demonstration project, *as long as customers are not required to pay higher costs than the Natrium's IRP modeled costs*, especially if the higher costs exceed the next most cost-effective alternatives that would have been selected by the model.[19]

This is similar to the Division's position in its Initial Comments, which stated that "the cost inputs for the Natrium plant are speculative and no contract is in place to detail the maximum cost ratepayers would be expected to pay (or if such a maximum will be in place)."[20] Given the history of nuclear plant cost overruns, the Company needs to indicate the maximum that ratepayers will be expected to pay, and how this maximum relates to the modeled costs.

In addition, as stated in the Division's initial comments, the IRP does not comply with Guideline 3 or 6. The Division noted that because the Company did not adhere to the Commission's Guidelines, the result is a preferred portfolio that may not be the least-cost, least-risk option.

The OCS also argues that the Company did not adhere to Guideline 4(b), which requires: "An evaluation of all present and future resources, including future market opportunities…on a consistent and comparable basis." The Division agrees, and notes that this Guideline is repeated in subsequent orders, including the 2008 Report and Order, which reiterated the need for a "consistent and comparable treatment of resources."[21] The Commission was

[17] OCS Initial Comments, p. 2.
[18] Division Initial Comments, pp. 20-29 and pp. 31-40.
[19] *Id.* at 7 (emphasis added).
[20] Division Initial Comments, p. 27.
[21] Report and Order, Docket No. 09-2035-01, April 1, 2010, p. 35. In that Report and Order, the Commission directed the Company to include the Lake Side 2 power plant in sensitivity cases, not in the core cases. Although the circumstances involving the Natrium project are different than those involving the Lake Side 2

concerned with ensuring that there is a consistent and comparable treatment of resources in the IRPs.

The OCS states that "the Natrium technology is unable to be adequately compared to other known resources that have a history of successful construction and operation."[22] The Commission's 2008 IRP Order further bolsters the OCS's claim that the Natrium technology is unable to be consistently and comparably compared to known resources, and accordingly should not have even been considered in the Company's core cases. The Division supports the OCS's claim that the Company did not adhere to Guideline 4(b).

Transmission Issues

The Division agrees with UAE that the "IRP process would be improved if additional information were provided regarding the evaluation of transmission alternatives considered during the transmission planning process."[23] In the recent docket for the Company's application for a certificate of public convenience and necessity (CPCN) for the Gateway South project, the Division discussed the fact that by the time the CPCN docket occurs, the Company has already taken many actions that already rely on the transmission project in question.[24] UAE notes in its Initial Comments for the IRP that the preferred portfolio includes several large transmission projects to be completed from 2025 to 2040, and states that:

> …the discussion about transmission planning projects in the IRP would be improved if more information about these projects was provided earlier in the process, rather than after the Company has committed to a specific route or transmission configuration to the exclusion of other options. As such, UAE requests that the Company provide information in the IRP process about alternative transmission solutions, including alternative routes and terminals,

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plant, the 2008 Report and Order reaffirms the need for a consistent and comparable treatment of resources and shows that uncertain resources can be addressed in sensitivities, rather than in core cases.

[22] OCS Initial Comments, p. 5.

[23] UAE Initial Comments, p. 5.

[24] See Direct Testimony of David Williams for the Division of Public Utilities, January 25, 2022, Docket No. 21-035-54 (Williams Direct Testimony), lines 349-59.

> being considered for the Utah South Reinforcements, as well as for any other major transmission planning project.[25]

The Division agrees. New large transmission projects should be described in the IRP so that parties can begin requesting analyses of those projects before the projects become the only viable option (as described in the Williams Direct Testimony in Docket No. 21-035-54).

A related transmission issue is raised by the Company's response to the OCS's recent IRP Data Request 3.1, which the Company answered after initial IRP comments were due.[26] In its reply to that DR, the Company stated:

> In PacifiCorp's 2021 IRP, the Energy Gateway South transmission project is modeled net of the cost offset for the alternative 230 kilovolt (kV) transmission project to accommodate PacifiCorp obligation to provide firm point-to-point (PTP) transmission service to a third party transmission customer. The 230 kV is not available if Energy Gateway South is not built. The $1.4 billion cost assumed for the alternative is the minimum cost for the upgrades required to grant a single transmission service request (TSR).

The Division reads this reply as stating that when Gateway South is modeled in the IRP (e.g. when it is available for endogenous selection by Plexos), its cost is reduced by $1.4 billion, since the mentioned TSR would necessitate that minimum upgrade whether Gateway South is built or not. The Division and UAE objected to this line of reasoning in Docket No. 21-035-54.[27] Therefore, the Division requests an IRP modeling sensitivity run where the Gateway South project is not offset by the $1.4 billion that the Company claims would be necessary for the wheeling upgrade. The Division recommends the Commission order the Company to provide this sensitivity for the 2021 IRP Preferred Portfolio.

Conclusion

Based on initial comments filed by other parties, the Division concludes the following:

- There is broad agreement from intervening Utah parties that the Natrium project should not be in the preferred portfolio, due to uncertainties regarding how cost

[25] UAE Initial Comments, p. 9.
[26] Rocky Mountain Power's Response to OCS 3rd Set Data Request 3.1, March 31, 2021.
[27] Williams Direct Testimony, Docket No. 21-035-54, lines 170-262; Direct Testimony of Justin Bieber on behalf of the Utah Association of Energy Users, January 25, 2022, Docket No. 21-035-54, lines 342-376.

overruns should be handled and other issues. The Division welcomes the presence of nuclear power in the IRP plan if it is determined to be part of a least-cost, least-risk portfolio; however, at this nascent stage of the project, there is not enough information about project costs for the project to be in the preferred portfolio.

- The Division agrees with the OCS and UCE that the source of fuel for the Natrium plant should also be determined in more detail before the project can be considered for the preferred portfolio.
- The Division agrees with the OCS that several IRP Guidelines were not met. In this Division's view, the result should be that the inclusion of the Natrium plant in the preferred portfolio and the decision to not model new natural gas plants should not be acknowledged.
- The Division is not convinced that the offset to Gateway South costs mentioned in the Company's response to OCS data request 3.1 is appropriate and requests that the Commission require that the Company run a sensitivity where this offset is not used.
- The Division agrees with UAE that the Company should summarize new planned or proposed transmission projects in each IRP so that parties are aware of them and can begin to formulate requests for analysis.

cc: Michele Beck, OCS
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