

# PacifiCorp - Stakeholder Feedback Form

## 2021 Integrated Resource Plan

PacifiCorp (the Company) requests that stakeholders provide feedback to the Company upon the conclusion of each public input meeting and/or stakeholder conference calls, as scheduled. PacifiCorp values the input of its active and engaged stakeholder group, and stakeholder feedback is critical to the IRP public input process. PacifiCorp requests that stakeholders provide comments using this form, which will allow the Company to more easily review and summarize comments by topic and to readily identify specific recommendations, if any, being provided. Information collected will be used to better inform issues included in the 2021 IRP, including, but not limited to the process, assumptions, and analysis. In order to maintain open communication and provide the broader Stakeholder community with useful information, the Company will generally post all appropriate feedback on the IRP website unless you request otherwise, below.

Date of Submittal 7/9/2021

\*Name: Nancy Kelly

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Public Meeting Date comments address: 6/25/2021  Check here if not related to specific meeting

List additional organization attendees at cited meeting: \_\_\_\_\_

**\*IRP Topic(s) and/or Agenda Items:** List the specific topics that are being addressed in your comments.

Natrium project, Plexos model

Check here if any of the following information being submitted is copyrighted or confidential.

Check here if you do **not** want your Stakeholder feedback and accompanying materials posted to the IRP website.

**\*Respondent Comment:** Please provide your feedback for each IRP topic listed above.

1. Is the Natrium sodium-cooled fast reactor a "breeder" reactor?

### PacifiCorp Response

No.

2. An article in Canary Media claims that the Natrium fast reactor uses "high-assay low-enriched uranium (HALEU) as its nuclear fuel." The article explains that "HALEU is enriched 5 percent to 20 percent in the isotope uranium-235. By comparison, the world's fleet of light water reactors uses fuel enriched to less than 5 percent uranium-235." It further claims that there is no current supply of HALEU and that establishing a commercial supply would require a minimum of seven years to develop fuel cycle infrastructure.

a. Does the Natrium demonstration project require HALEU as the article states?

### PacifiCorp Response

Yes.

b. If the answer to "a" is yes, how do the project's developers plan to assure a sufficient supply of HALEU concurrent with the project coming on line?

\* Required fields

**PacifiCorp Response**

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As part of its work under the United States Department of Energy’s (DOE) Advanced Reactor Demonstration Program (ARDP), TerraPower plans to team with Centrus to establish commercial-scale, domestic HALEU production capabilities. These advanced reactor demonstrations projects, including the Natrium demo, are a strong market signal to show the need to increase HALEU production capability and infrastructure.

- c. If the plan is to process HALEU from mined uranium, will the uranium come from Wyoming mines or from somewhere else?

**PacifiCorp Response**

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The initial source of the uranium has not yet been determined as the supply strategy is still in development.

- d. If the answer to “a” is no, what type of uranium will the reactor burn? Will the uranium come from Wyoming mines or from somewhere else?

**PacifiCorp Response**

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Please see response to part “c” above.

- 3. In his book, “Avoiding Climate Disaster,” Bill Gates states that advanced nuclear designs can use spent fuel from other facilities as a fuel source.
  - a. Can the Natrium reactor use spent fuel?

**PacifiCorp Response**

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No.

- b. If the answer to “a” is yes, is spent fuel currently being considered as a fuel source?
- c. If the answer to “b” is yes, what sources of spent fuel are being considered?

**PacifiCorp Response**

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N/A

- 4. Because stakeholders do not have familiarity with PLEXOS, very soon after filing the 2021 IRP, please provide a full-day workshop to achieve two purposes:
  - a. Assist stakeholders in understanding the model’s inner workings;
  - b. Assist stakeholders in understanding the structure of the confidential workpapers that will have been provided in support of PacifiCorp’s modeled results.

**PacifiCorp Response**

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Thank you for this feedback. PacifiCorp will consider scheduling a workshop following the filing of the 2021 IRP to provide an opportunity to discuss the organization of the workpapers and to discuss the Plexos model.

5. On page 34 of the June 25 PIM presentation the diagram references "Spanning Conditions": e.g., annual emissions constraints.

- a. Is the purpose of the spanning conditions to model regional haze emissions limitations, or does it have some other purpose?

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**PacifiCorp Response**

A spanning condition is any constraint that spans periods of time longer than the short-term (ST) model can 'see' at each step of its highly granular calculations. Regional haze emission constraints fall under this definition but are not the only spanning conditions. A key function of the medium-term (MT) model is to "decompose" spanning conditions into shorter periods and inform the ST model as a "budget" to apply to each granular period. Common spanning conditions are for annual emissions, fuel supply and maximum starts for generating units.

The regional haze operating limits are spanning conditions because the annual limits are expressed as "tons/year". (Please refer to the Dec 3-4, 2020 public-input meeting presentation, slide 7).

- b. If its purpose is to model regional haze emissions limitations please provide a detailed explanation of how these spanning conditions assure the rate of emissions is not exceeded in any time period.

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**PacifiCorp Response**

The MT model automatically determines which constraint objects require decomposition for the ST model. As described in response to part a above, if the constraint period is longer than the step length of ST model then the constraint is decomposed. For example, a maximum energy constraint will be decomposed into an energy allocation for each granular period of the ST model. Should the ST model under- or over-use the allocated quantities in any step, then 'roll over' logic keeps track of this to ensure that the original constraint is satisfied.

- c. Could PLEXOS use "spanning conditions" to model CO2 emission limitations?

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**PacifiCorp Response**

Yes. The MT model would automatically interpret an annual CO<sub>2</sub> cap as a spanning condition. Current price-policy scenarios model CO<sub>2</sub> as a cost-adder. This cost-adder does not create a spanning condition because it is levied on a price-per-ton basis and not as cap on emissions during production.

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**Data Support:** If applicable, provide any documents, hyper-links, etc. in support of comments. (i.e. gas forecast is too high - this forecast from EIA is more appropriate). If electronic attachments are provided with your comments, please list those attachment names here.

<https://www.canarymedia.com/articles/bill-gates-wants-to-build-advanced-nuclear-power-at-retired-wyoming-coal-plants/>

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**Recommendations:** Provide any additional recommendations if not included above - specificity is greatly appreciated.

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Please submit your completed Stakeholder Feedback Form via email to [IRP@PacifiCorp.com](mailto:IRP@PacifiCorp.com)

Thank you for participating.

\* Required fields