January 30, 2019

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Filed via Web Portal

Mark L. Johnson, Executive Director and Secretary
Washington Utilities and Transportation Commission
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Olympia, Washington 98504-7250

Re: Docket UE-161024: Comments of a Coalition of Ratepayers in Response to Notice of Opportunity to Submit Written Comments on Public Utility Regulatory Policies Act, Obligations of the Utility to Qualifying Facilities

Dear Mr. Johnson and Commissioners,

Please accept the following additional comments regarding Docket UE-162024. Although I have addressed specific details regarding the planning and bidding process of Washington's investor-owned utilities in prior comments, I am concerned about broader issues that will affect our energy grid in coming years. As a member of Puget Sound Energy's Technical Advisory Group working on the utility's 2019 IRP (and the 2017 IRP before that), I am aware of features customers expect from a modern electric grid that are not being properly evaluated or valued in the current planning process:

- **Reliability** is key. As electricity plays an increasing role in transportation, heating and cooling, and smart infrastructure, outages will become even more disruptive and dangerous than today. Widespread outages of any significant duration could be life-threatening.
- **Resilience** allows the grid to maintain service after a large, potentially disruptive event, whether it's a natural disaster or caused by humans, intentionally or accidentally.
- **Safety** is an increasing concern as transmission lines spark large fires or pipelines explode. Safer technologies should be preferred to minimize harm to the public.
- **Sustainability** ensures that future generations won't have to pay high costs for shortsighted planning today.

Although reliability and cost are used as key metrics in the IRP process, other important features are not. Could a more holistic approach benefit ratepayers and the utilities?

Reliability

The reliability of our electric grid is not improving. Figure 1 shows **increasing outage duration** (SAIDI = System Average Interruption Duration Index) for three Washington investor-owned utilities (IOUs) over the past sixteen years.[1] Windstorms and tree strikes are the main reasons for more frequent and longer power outages for utility customers.

For example, PSE's reliability falls in the lowest quartile compared to its peers.[2] Ratepayers would like to see especially vulnerable distribution lines placed underground, but PSE argues against even short lengths of underground lines. Most ratepayers are willing to pay for increased reliability and safety. Do current regulations and incentives discourage IOUs from making such improvements?

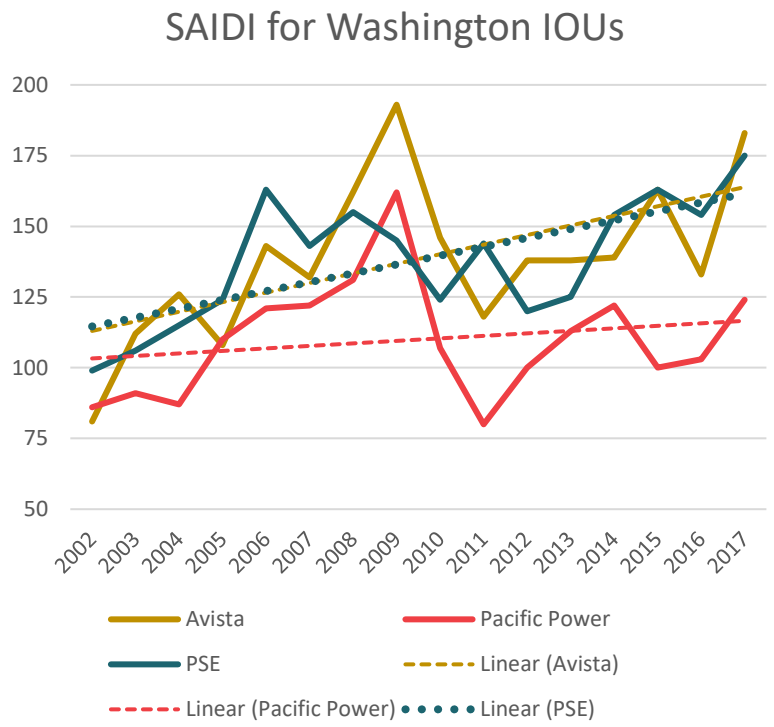

Figure 1 – Reliability trends for three Washington utilities

[1] https://www.utc.wa.gov/regulatedIndustries/utilities/energy/Pages/electricReliabilityReports.aspx

[2] According to Jens Nedrud at the Jan. 9, 2019 of PSE's Technical Advisory Group

Resilience

Can Washington's power grid survive major windstorms, earthquakes, cyber-attacks, and natural or malicious electromagnetic pulses? Experts warn that these events could cause power outages on a massive scale, disrupting service for weeks or months. By properly accounting for the resilience of different energy alternatives in the bidding process for new energy projects, we can begin to harden our grid and potentially save many lives.

For example, resilience to major earthquakes might be improved by developing micro-grids powered by local sources of electricity (solar, geothermal, or combined heat and power).[3] Energy storage can also play a role.[4] Micro-grids could provide better protection from cyber-attacks.[5] Do investor-owned utilities have sufficient incentives to pursue these investments? Does the public have opportunities to participate?

Electromagnetic pulses (EMPs) could cause long-lasting and widespread damage from thermonuclear detonations above the atmosphere, terrorist attacks using commercially available equipment the size of a suitcase, or solar flares.[6] A FERC report identifies the Pacific Northwest as being particularly vulnerable to EMP damage (see Figure 2).[7] Utilities can install relatively inexpensive countermeasures that insulate vulnerable equipment or trip circuits to limit the scope of the damage. Is this a priority for Washington utilities?

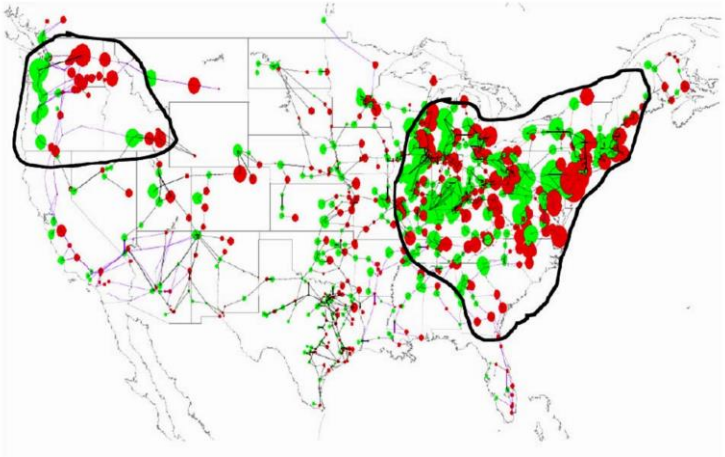

Figure 2 – Areas of probable power system collapse

After talking to a three-star general who is working on a federal commission to address EMP threats, I asked Phillip Popoff, PSE's resource planning manager, what PSE was doing to mitigate the effects of an EMP event. He didn't know, because it isn't part of the company's resource planning effort. Mr. Popoff sent me PSE's "2017 Critical Infrastructure Security Annual Report." This report focuses mostly on cyber security. It also mentions "physical security," but it lists no specific programs or plans to prepare for storms, earthquakes, or EMP threats.

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[3] https://microgridknowledge.com/microgrids-for-resilience/
[4] https://www.energy-storage.news/blogs/investing-in-energy-storage-for-resiliency-the-business-case
[5] https://www.pri.org/stories/2018-04-07/can-us-protect-its-power-grid-hackers
[6] https://thehill.com/opinion/cybersecurity/411451-ignoring-emp-threat-is-a-death-sentence-for-americans
[7] https://www.ferc.gov/industries/electric/indus-act/reliability/cybersecurity/ferc_executive_summary.pdf

Safety

No energy generation or distribution technology is 100% safe, but some solutions are safer than others. When competitive bids are evaluated in the proposed RFP process, is the cost of safety risk included in the analysis? For example, transmission lines increase the risk of fires and electrocution accidents. The public would like the planning process to account for this risk when the cost of a transmission line is compared to the cost of a solution using non-wire alternatives. A proper accounting of risk protects the public, the utility, and its shareholders. After massive wildfires killed at least 22 people and destroyed whole towns in California, Pacific Gas & Electric filed for bankruptcy due to liability from sparking transmission lines.[8]

Having learned the hard way, the California Public Utility Commission reconsidered how risk is evaluated and how the public will participate. One of the commissioners, Clifford Rechtschaffen, wrote an op-ed describing how the new process would address the problem:[9]

> *[U]tility decision-making about safety risks on their systems has always been something of a black box. Utilities have made decisions about which risks to prioritize and how much of ratepayer dollars to spend mitigating them by relying primarily on the judgment of subject matter experts. This can provide useful perspective, of course, but it also introduces considerable subjectivity and variability into the decision-making process.*
>
> *Utilities will now be required to evaluate risks in a much more transparent, uniform and quantitatively rigorous way.*
>
> *They must use data, rather than subject matter expertise, when available, and clearly describe their inputs and computations. They must perform a far more thorough and exacting quantitative analysis to determine and compare risk reduction benefits from various mitigation measures, including the relative efficiency of their risk-reduction spending. They will also be required to publicly present their analysis identifying their top risks and seek input from interested parties and CPUC staff.*

The Washington UTC should consider how policies and procedures might be improved before lives are lost and utilities are bankrupted in our state.

[8] https://www.forbes.com/sites/christopherhelman/2019/01/21/as-30b-in-wildfire-claims-bankrupt-pge-california-wonders-who-will-pay-after-the-next-conflagration/#56fff2002699

[9] https://www.utilitydive.com/news/cpuc-commissioner-creating-a-new-risk-evaluation-paradigm-in-the-face-of/547019/

Sustainability

Environmental organizations are asking utilities to include the social cost of greenhouse gases, including upstream emissions, when developing long-range Integrated Resource Plans. These same factors should be analyzed and considered in the bidding of all generation and delivery projects. Exempting delivery resources and small generation projects from the RFP process would hinder sustainable technologies and development of a modern grid.

Fast track to a modern grid

To accelerate modernization of our electric grid and avoid catastrophic failures, it is critical to align the economic incentives of utilities with the goals we want to achieve. A well-designed RFP bidding process can create a level playing field for all technologies, and reward solutions that improve the reliability, resilience, safety, and sustainability of the energy grid.

Ratepayers ask the UTC to be proactive in creating a modern RFP process that serves these goals.

Sincerely,

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cc: Lisa Gafken, Public Counsel