

October 26, 2023

Commissioner Decker
Oregon Public Utility Commission
201 High St. SE, Suite 100
Salem, OR 97301



Re: Docket AR 659 - Public Comment Period

Commissioner Decker, Oregon Public Utilities Commission:

I am writing to provide comments on the proposed interconnection standards in Dockets UM2111 and AR 659. As an electrical engineer with over 10 years of experience in distributed energy resource (DER) projects, I have been following UM2111 closely since early this year. Overall, I support the adoption of IEEE 1547-2018 and the IREC export control recommendations, which will enable higher DER penetration.

However, I have concerns about the non-consensus item proposed by the joint utilities to require DER systems to trip off the grid within 2 seconds for inadvertent export, when sited on feeders with high-speed reclosing devices. Reducing the trip time for export relays does not actually provide additional anti-islanding protection beyond what is already included in certified inverters per IEEE 1547-2018. Export relays operate only in grid-connected mode and are not designed or certified to detect islanding. The measure needlessly adds complexity and potentially cost.

PUC staff's explanation for supporting the provision appeared to hinge on the general unreliability of PV inverters in 'abnormal conditions'. The extent of the technical imprecision in support of this measure is made plain by the PUC staff's mention of the entirely unrelated Odessa incident in the Special Meeting, as well as the utilities inability to define the unique circumstances that make the requested protection applicable (in their October 2022 comments).

A thin layer of theoretical, anti-islanding protection can be contemplated only by assuming a convergence of circumstances with compounding improbability. These circumstances were not presented to the Commission. Examples might include a completely coincidental inadvertent export event a *second* before a utility breaker trip; the failure of a power control system coinciding with matched real and reactive power generation/load conditions; or multiple sites experiencing inadvertent export synchronously. With these contortions, someone can create a theoretical possibility for an event to be protected against, but the probabilities defy the human imagination.

To avoid probabilities going wildly exponential, the utility needs to argue that an export control device *responds* to the utility trip to clear an island that the inverter cannot. This construction would truly make a directional relay into an anti-islanding device. It assumes that an increase in export power *follows* the trip thus activating a 32R, 32F or 32 device. Yet fluctuations in power output are exactly the instability that prevent an island from forming at all. There is a reason that common directional relays are not specified to reinforce anti-islanding protections, and that the far more costly direct transfer trip (DTT) is specified, where inverter-level anti-islanding is not trusted.

Unfortunately, anti-islanding is being stubbornly thrust into a new subject area, needlessly wasting the Commission's time and confusing the staff. At one end, the Oregon utilities apply the most conservative, technical interpretations theoretically possible. At the other end, they persist, in using net metered, DC capacities in AC impact assessments. It is a lop-sided arrangement made plain in these proceedings.

Collaboration among stakeholders is vital as we work to modernize Oregon's distribution grid. I hope the Commission will take a leadership role in facilitating constructive engagement on interconnection standards, with an openness to external expertise. Thank you for the opportunity to comment.

Sincerely,

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