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Perry Nuclear Power Plant  
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L-21-142

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington DC 2055-0001

**SUBJECT:**

Perry Nuclear Power Plant

Docket No. 50-440, License No. NPF-58

Update – Commitment Closure to Modify Undervoltage/Degraded Voltage Protection Design

As a result of an event at the Perry Nuclear Power Plant (PNPP) that involved loss of power to Division one shutdown cooling during shutdown, a vulnerability was identified in the original design of the undervoltage/degraded voltage (UV/DV) protection circuitry. Specifically, the issue was revealed on February 11, 2016, when a single fuse on one phase of the division one 4.16 kV safety bus failed, causing the UV/DV protection circuitry to satisfy the coincidence logic and separate that bus from the offsite power source. This issue was documented in PNPP Licensee Event Report 2016-003 (ADAMS Accession No. ML16104A024). This issue was also characterized as an unresolved item (URI) during a Special Inspection conducted at PNPP starting February 29, 2016 and documented in Reactive Inspection Report 05000440/2016008 (ADAMS Accession No. ML16057A039), dated May 25, 2016.

Energy Harbor Nuclear Corp (EHNC) determined that the preferred option to mitigate this issue would be a design modification of the UV/DV circuits. On June 7, 2016, EHNC transmitted a letter to the NRC (ML16166A197) committing to installation of a modification to the UV/DV protection scheme for the division one, two and three 4.16kV safety buses that will prevent a failed fuse from satisfying the coincident logic and causing a separation of the offsite power source from the safety bus when no UV/DV condition exists thus eliminating this single point vulnerability.

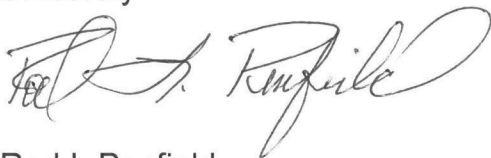
However, to preclude the risks associated with an inadvertent separation of the offsite power source from the safety buses during installation, the modification on the division one and two 4.16kV safety buses required installation during a refueling outage. Even

during a refueling outage, the new design had to be installed and tested on a divisional basis to manage shutdown risk.

The UV/DV design modification was implemented for division 1 on 03/16/2021, division 2 on 03/19/2019, and division 3 on 08/07/2020. The implemented design modification is consistent with other industry UV/DV protection designs and did not require prior NRC approval for implementation. A such Energy Harbor Nuclear Corp has closed this commitment.

Regulatory commitments referenced in this letter have been closed. If there are any questions or if additional information is required, please contact Mr. Glen Burnham, Manager, Regulatory Compliance at (440) 280-7538.

Sincerely

A handwritten signature in black ink, appearing to read "Rod L. Penfield". The signature is fluid and cursive, with the first name "Rod" being more prominent.

Rod L Penfield  
Perry Nuclear Power Plant

CC: Director, Office of Nuclear Reactor Regulation (NRR)  
NRC Region III Administrator  
NRC Resident Inspector  
NRR Project Manager