

Frank Payne
Vice President

440-280-5382

October 7, 2019
L-19-201

10 CFR 50.59(d)(2)

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001SUBJECT:
Perry Nuclear Power Plant
Docket No. 50-440, License No. NPF-58
Report of Facility Changes, Tests, and Experiments

The FirstEnergy Nuclear Operating Company (FENOC) hereby submits the Perry Nuclear Power Plant Report of Facility Changes, Tests, and Experiments. The attached report covers the period from October 5, 2017 to October 6, 2019.

There are no regulatory commitments contained in this submittal. If there are any questions or if additional information is required, please contact Mr. Phil H. Lashley, Acting Manager – Nuclear Licensing and Regulatory Affairs, at (330) 315-6808.

Sincerely,



Frank R. Payne

Attachment:
Perry Nuclear Power Plant Report of Facility Changes, Tests, and Experiments for the
Period October 5, 2017 to October 6, 2019cc: NRC Region III Administrator
NRC Resident Inspector
NRC Project Manager

Attachment
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Perry Nuclear Power Plant
Report of Facility Changes, Tests, and Experiments for the Period
October 5, 2017 to October 6, 2019
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Title:

Mitigation/Elimination of Reaching a Level 8 Post Scram

Activity Description:

A design modification added a logic block to the digital feedwater control system (DFWCS) to provide automatic actions that will prevent a reactor water Level 8 trip post-scram. A reactor water Level 8 trip results in a loss of normal feedwater and allows high-pressure injection to be stopped automatically on high level. If both reactor feedpump turbines (RFPTs) and the motor feedpump are available following a drop and a recovery in reactor water level, this new software logic block will trip the RFPT 'A' through use of a spare digitally-controlled contact in parallel with the existing trip push button and transfers from three-element control to single-element control. These automatic actions will prevent a Level 8 trip, which would isolate the remaining feedwater pumps, without the need for expedited operator intervention.

Summary of Evaluation:

The as-modified digital feedwater control system will continue to provide normal reactor level control as the existing control system but with the addition of a new logic block to trip the RFPT 'A' and transfer to single-element control during the level swings experienced post-scram at high power in order to prevent a subsequent Level 8 trip. The evaluation was prepared using the guidance of NRC Regulatory Issue Summary (RIS) 2002-22, "Use of EPRI/NEI Joint Task Force Report, 'Guideline on Licensing Digital Upgrades: EPRI TR-102348, Revision 1, NEI 01-01: A Revision of EPRI TR-102348 To Reflect Changes to the 10 CFR 50.59 Rule,'" as appropriate. The software change that this modification implemented in the DFWCS complies with FENOC's software quality assurance requirements and was extensively tested to ensure that it met the design requirements. The DFWCS does not directly control any SSC that mitigates the consequences of an accident. In the event of a failure of this new logic block, the SSCs that are credited with mitigating that failure are unaffected by this change. The failure modes of the new logic block in the DFWCS have been analyzed in the failure modes and effects analysis, which concluded there are no new failure effects that would initiate an accident or create an accident of a different type.

The feedwater system and the associated digital feedwater control system are important to safety systems as they provide the normal reactor water level control; however, any failure of the systems is already bounded by the loss of feedwater and overfeed transients analyzed in the Updated Safety Analysis Report (USAR). Therefore, the as-modified DFWCS does not (1) increase the likelihood of occurrence of previously evaluated malfunctions of an SSC important to safety, (2) increase the

consequences of a malfunction of an SSC important to safety, or (3) introduce a malfunction of an SSC important to safety with a different result.

In conclusion, the modification to the DFWCS does not require a departure from a method of evaluation described in the USAR, and the DFWCS does not interact directly or indirectly with a fission product barrier. The proposed activity does not meet any of the 10 CFR 50.59 (c)(2) criteria; therefore, a license amendment is not required.