



Energy Harbor Nuclear Corp.  
Perry Nuclear Power Plant  
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October 18, 2021  
L-21-230

10 CFR 50.59(d)(2)

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Subject:  
Perry Nuclear Power Plant  
Docket No. 50-440, License No. NPF-58  
Report of Facility Changes, Test, and Experiments

Pursuant to 10 CFR 50.59(d)(2), the Energy Harbor Nuclear Corp. hereby submits the Perry Nuclear Power Plant Report of Facility Changes, Tests, and Experiments. The attached report covers the period from October 7, 2019 to October 8, 2021.

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, Manager, Fleet Licensing, at (330) 696-7208.

Sincerely,

A handwritten signature in black ink, appearing to read "Rod L. Penfield", written over a white background.

Rod L. Penfield

Attachment:

Perry Nuclear Power Plant Report of Facility Changes, Test, and Experiments for the Period October 7, 2019 to October 8, 2021

cc: NRC Region III Administrator  
NRC Resident Inspector  
NRC Project Manager

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Title:

Manual Lockout Switch for Main Turbine Mechanical and Electrical Trips

Activity Description:

A modification added a switch to manually control the mechanical trip lockout and electrical lockout valve solenoids during the overspeed/turbine testing to reduce the potential of an inadvertent turbine trip. Plant personnel identified that the main turbine automated mechanical and electrical overspeed test features were susceptible to causing a turbine trip if the logic deenergizes the mechanical or electric trip lockout valve solenoid prior to the trip logic and components resetting during the associated overspeed test. The modification installed a three-positioned contact switch in the control room, which allows the operator to manually energize the mechanical trip lockout valve solenoid or the electrical trip lockout solenoid prior to the associated overspeed/turbine trip tests and restoring the trip following completion of the testing. This deliberate operator action eliminates the potential that the automated test process would deenergize the lockout valve solenoid prematurely.

Summary of Evaluation:

The modified turbine protection system will continue to trip the turbine under potentially damaging conditions. The addition of the switch to manually control the mechanical and electrical lockout valves during the overspeed/turbine trip testing reduces the potential of an inadvertent turbine trip. The switch and circuit design are such that at no time is the turbine left with no means of overspeed protection. Therefore, the turbine missile generation probability is not impacted. The failure modes and effects analysis determined that there are no new failure effects that would initiate an accident or create an accident of a different type.

The change from the automated test feature to the manual control for the lockout valves does not impact the results of the turbine trip transients evaluated in the updated safety analysis report (USAR). Therefore, the as-modified turbine protection system does not (1) increase the likelihood of occurrence of previously evaluated malfunctions of a system, structure, or component (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.

The modification to the turbine protection system is not a departure from a method of evaluation described in the USAR, and the turbine protection 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.

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Title:

Control Rod Drop Accident Scenario 2 with Increased Offgas Flow

Activity Description:

The updated safety analysis report (USAR) is revised to note that the offgas flow rate cited in the USAR (30 scfm) is considered a nominal value and not a design basis limit for the system. Additionally, this activity revised the assumptions in the control rod drop accident and resulting dose analysis in USAR Chapter 15.4 to reflect: no loss of offsite power, a total offgas inleakage of 100 scfm (50 scfm per train), an elevated absorber temperature of 80°F, and both trains of charcoal absorber in operation with three of the four charcoal absorbers per train in service at the time of the event. Each of these assumptions is considered conservative. The USAR was updated to indicate the resultant noble gas holdup time in the charcoal adsorbers given the change in input assumptions.

Summary of Evaluation:

The revised calculation reflected the impact of changing the mass of charcoal in the offgas vaults, offgas flow rates through the charcoal from condenser inleakage, and adsorber temperature on the holdup time for noble gasses that migrate through the charcoal adsorbers.

The impact to the licensing basis is that the dose consequences from the increased offgas flow, elevated adsorber temperature, and three of the four charcoal absorbers per train in service, increased offsite and control room dose by 0.0016%. The update to the calculation does not result in more than a minimum increase in the consequences of an accident evaluated in the USAR. This activity does not (1) increase the frequency of occurrence of an accident previously evaluated in the USAR or the possibility for an accident of a different type, (2) increase the likelihood of occurrence of previously evaluated malfunctions of a system, structure, or component (SSC) important to safety or 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 than previously evaluated in the USAR.

The calculation addendum is not a departure from a method of evaluation described in the USAR and does not result in a design basis limit for a fission product barrier as described in the USAR. The proposed activity does not meet any of the 10 CFR 50.59(c)(2) criteria; therefore, a license amendment is not required.

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Title:

MSIV Closure

Activity Description:

This activity revised the dose consequences of the main steam line isolation valve (MSIV) closure transient described in the updated safety analysis report (USAR). The MSIV closure calculation provides the basis for the dose consequence of the MSIV transient and was revised to correct the credited filtration efficiency and incorporate the updated atmospheric dispersion factor.

Summary of Evaluation:

The revision to the MSIV closure calculation that supports the radiological consequences described in the USAR corrects the filtration efficiency and incorporates a conservative atmospheric dispersion coefficient based on information contained within the USAR.

The impact to the licensing basis is that the transient dose for the site boundary whole body and thyroid increased by 0.41 mRem and 0.03 mRem respectively. The update to the calculation does not result in more than a minimum increase in the consequences of an accident evaluated in the USAR. This activity does not (1) increase the frequency of occurrence of an accident previously evaluated in the USAR or the possibility for an accident of a different type, (2) increase the likelihood of occurrence of previously evaluated malfunctions of an system, structure, or component (SSC) important to safety or 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 than previously evaluated in the USAR.

The update to the calculation is not a departure from a method of evaluation described in the USAR and does not result in a design basis limit for a fission product barrier as described in the USAR. The proposed activity does not meet any of the 10 CFR 50.59(c)(2) criteria; therefore, a license amendment is not required.