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February 9, 2017

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

SUBJECT: 10 CFR 21 Evaluation Regarding Design Basis Calculation Error Using FLO-2D Software

This letter serves as an evaluation summary in accordance with 10 CFR 21.21 pertaining to a potential defect associated with a design basis calculation delivered to FirstEnergy Nuclear Operating Company's Perry Nuclear Power Plant. The 10 CFR 21.21 Interim Report was filed on November 23, 2016. An Amendment to the 10 CFR 21.21 Interim Report was filed on December 12, 2016.

Subsequent to the filing of the Amendment to the Interim Report, the updated FLO-2D software, build 16.06.16, was verified and validated and a re-analysis performed. A comparison between the original analysis and the updated analysis using the updated software was then performed. This analysis indicates flood water level changes assumed in the Perry Nuclear Plant flooding analyses are small, -0.14 feet to +0.16 feet (-1.6 inches to +1.9 inches).

The comparative results between the two analyses were provided to First Energy Company's Perry Nuclear Power Plant on February 3, 2017. Perry Nuclear Plant staff are continuing to review these results in order to complete the determination of whether the change in flood water levels results in additional reporting requirements.

If you have any questions or need further clarifying information, please contact Nick Eggemeyer, Corporate Quality Assurance Manager, at (770) 590-2031.

Respectfully,

Timothy P. Cleary
Cleary P.E.
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IE19
NRR

Part 21 (PAR)

Event # 52537

Rep Org: EMERSON PROCESS MANAGEMENT	Notification Date / Time: 02/08/2017 11:17 (EST)
Supplier: FISHER CONTROLS INTERNATIONAL LLC	Event Date / Time: 01/02/2017 (CST)
	Last Modification: 02/08/2017
Region: 3	Docket #:
City: MARSHALLTOWN	Agreement State: Yes
County:	License #:
State: IA	
NRC Notified by: KIM SAGAR	Notifications: SHANE SANDAL R2DO
HQ Ops Officer: DONG HWA PARK	MICHAEL KUNOWSKI R3DO
Emergency Class: NON EMERGENCY	PART 21/50.55 REACTORS EMAIL
10 CFR Section:	
21.21(d)(3)(i) DEFECTS AND NONCOMPLIANCE	
50.55(e) CONSTRUCT DEFICIENCY	

PART 21 - VALVE ASSEMBLY NONCONFORMANCE

"Subject: 3" Style HPNS Valve Body/Cage/Plug Retainer Binding

"Equipment Affected by this Fisher Information Notice: Items subject to this Fisher Information Notice (FIN) are confined to the equipment and orders referred to in Appendix A attached. Specifically, affected equipment refers to the 3" style HPNS valve body for next-generation nuclear plants and its associated cage and plug retainer.

"Purpose: The purpose of this FIN is to alert affected customers that, as of 2 January 2017, Fisher Controls International LLC (Fisher) became aware of a situation which may affect the performance of the aforementioned equipment, including its safety-related function. Fisher is informing affected customers of this circumstance in accordance with Section 21.21(b) of 10 CFR 21.

"Applicability: This FIN applies only to the equipment identified in Appendix A, which lists serial numbers and order numbers that were delivered to customers. Specifically, it applies to the Fisher 3 style HPNS valve body assembly, sold to AP1000 next generation plant sites, Commodity Package PV14, Datasheet 111.

"Discussion: During plant hot functional testing, certain valve assemblies did not achieve full travel. Upon disassembly, site inspection found wear between the cage and plug retainer in some valves. Vertical scratches in the cage internal diameter and plug retainer outside diameter was confirmation of galling which prohibited full travel. In one valve, the cage could not be removed from the body as it was friction-welded due to galling.

"The valve body-to-cage interference is attributed to body-to-bonnet gasket compression which caused the valve body gasket groove to distort/yield, particularly the cage guide internal diameter bore. Regarding the cage-to-plug

retainer binding, thermal expansion calculations between cage internal diameter and plug retainer outside diameter indicate an undersized diametrical clearance at temperature.

"Extent of Condition: In addition to the equipment listed in Appendix A, all other style HPNS designs (NPS 1/2, 1, 2, 3, 4, 6, and 8) were examined for extent of condition. Results indicate that DS111 was a lone outlier and this issue is not expected to occur for the other sizes, material combinations and datasheets sold into their respective applications and temperatures. Arrangements have been made with the customers to replace or maintenance the trim for the equipment listed in Appendix A. In addition, a Corrective Action Request (CAR 1817) has been initiated by Fisher to prevent reoccurrence of this issue.

"10 CFR 21 Implications: Fisher requests that the recipient of this FIN review it and take appropriate action in accordance with 10 CFR 21. If there are any technical questions or concerns, please contact: Ben Ahrens, Quality Manager, Emerson Automation Solutions, Fisher Controls International LLC, 301 South First Avenue, Marshalltown, IA 50158, Phone: (641) 754-2249, F (641) 754-2830."
