

November 14, 2016

MEMORANDUM TO: Kevin Hsueh, Chief  
Licensing Processes Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

FROM: Brian J. Benney, Senior Project Manager */RA/*  
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Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF SEPTEMBER 14, 2016, MEETING WITH THE  
FLOWSERVE TO DISCUSS PROBABILISTIC RISK ASSESSMENT  
MODEL FOR FLOWSERVE N-SEAL PACKAGES

On September 14, 2016, a Category 2 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) and representatives of Flowserve at NRC Headquarters, One White Flint North, 11555 Rockville Pike, North Bethesda, Maryland. The purpose of the meeting was to discuss a Flowserve Topical Report (TR) related to a probabilistic risk assessment (PRA) model for Flowserve N-Seal packages with the Abeyance Seal installed in Westinghouse Electric Company (Westinghouse) reactor coolant pumps (RCPs). The meeting notice and agenda are available in the Agencywide Documents Access and Management System under Package Accession No. ML161237A012.

The public meeting followed a request for a pre-submittal meeting to discuss NRC review and approval of a Flowserve TR. The purpose of the TR is to develop a model to estimate the probability of failure and resulting flow rates from the Flowserve N-Seal package with the Abeyance Seal given loss of cooling to the seal, under both static (RCPs off) and dynamic (RCPs running) conditions. This model represents the three-stage configuration that would be installed in Westinghouse RCPs, but is limited to the modeling of the Abeyance seal, and the dynamic operation of the N-seals under loss of cooling. The model is intended to be used by the licensees in PRA models to quantify the risk of an RCP seal loss-of-coolant accident given a loss of seal cooling event. It is expected that the model will be used in support of risk-informed license amendment requests by utilities that installed the N-Seal package in their RCPs.

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The NRC had few comments, but stressed that Flowserve should provide limitations and conditions on the use of the TR to aid in limiting the scope of the review.

At the conclusion of the meeting, the NRC staff and Flowserve agreed to hold a closed meeting to discuss proprietary material.

Project No. 822

K. Hsueh

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**ADAMS Accession Nos.: Package (ML16237A012); Summary (ML16288A814);  
Notice (ML16237A280); Attendees List (ML16286A018) \*via e-mail NRC-001**

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