May 9, 2008

MEMORANDUM TO: Farouk Eltawila, Director
Division of Systems Analysis
Office of Nuclear Regulatory Research

FROM: William H. Ruland, Director ***/RA/***
Division of Safety Systems
Office of Nuclear Reactor Regulation

SUBJECT: ADDITIONAL INFORMATION FOR CONSIDERATION IN EVALUATION OF THE USER NEED REQUEST FOR THE OFFICE OF NUCLEAR REGULATORY RESEARCH TO REVISE REGULATORY GUIDE 1.82 AND ADDRESS IDENTIFIED DISPARITIES IN TREATMENT OF DEBRIS-INDUCED CLOGGING OF EMERGENCY CORE COOLING SYSTEM STRAINERS

This memorandum provides reference to information that the Office of Nuclear Reactor Regulation (NRR) believes should be considered by the Office of Nuclear Regulatory Research (RES) in the response to the User Need, dated August 24, 2007 (ML070750300). The User Need requested coordination and development of a revision to Regulatory Guide (RG) 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident," to address lessons learned during the ongoing implementation of Generic Safety Issue (GSI) 191, "Assessment of Debris Accumulation on PWR Sump Performance." The user need also requested that RES consider and make recommendations to NRR regarding whether additional actions are warranted for existing reactor plants to address certain identified disparities in treatment of issues related to strainer clogging for pressurized water reactors (PWRs) and boiling water reactors (BWRs).

The most significant additional information is that recent testing indicates that high strainer head losses may occur with a relatively small amount of fibrous debris and expected amounts of particulate debris in the post-loss of coolant accident pool. References for this situation include:

- NRC Staff Review Guidance Regarding Generic Letter 2004-02 Closure in the Area of Strainer Head Loss and Vortexing (ML080230038)

- Staff Observations of Testing for Generic Safety Issue 191 During February 12 and February 13 Trip to the Alden Test Facility For PCI Strainer Tests (ML080920398)

Additional information that should be considered regarding various aspects of GSI-191 includes:

- WCAP-16793-NP, Revision 0, Evaluation of Long-Term Cooling Considering Particulate and Chemical Debris in the Recirculating Fluid (ML071580139)

CONTACT: Steve Smith 301 415-3190

- Pressurized Water Reactor Owners Group Responses to the NRC Request for Additional Information (RAI) on WCAP-16793-NP. "Evaluation of Lonm-Term Cooling Considering Particulate, Fibrous and Chemical Debris in the Recirculating Fluid" (PA-EE-0312) (ML073050471)

- Draft Safety Evaluation for Pressurized Water Reactor (PWR) Owners Group (PWROG) Topical Report (TR) WCAP-16793-NP, Revision 0, “Evaluation of Long-term Cooling Considering Particulate, Fibrous and Chemical Debris in the Recirculating Fluid” (TAC No. MD5891) (ML080600876)

- Draft Conditions and Limitations for Use of Westinghouse Topical Report WCAP-16793-NP, Revision 0, "Evaluation of Long-Term Cooling Considering Particulate, Fibrous and Chemical Debris In the Recirculating Fluid" (ML080180415)

- WCAP-16406-P-A, Revision 1, “Evaluation of Downstream Sump Debris Effects in Support of GSI-191” (ML081000027)

- Final Safety Evaluation by the Office of Nuclear Reactor Regulation for Topical Report (TR) WCAP-16406-P, Revision 1, “Evaluation of Downstream Sump Debris Effects In Support Of GSI-191” (ML073520295)

- Final Safety Evaluation by The Office of Nuclear Reactor Regulation for Topical Report WCAP-16530-NP “Evaluation Of Post-Accident Chemical Effects In Containment Sump Fluids to Support GSI-191” (ML073520891)

- Technical Letter Report on WCAP-16530-NP, “Evaluation of Post-Accident Chemical Effects in Containment Sump Fluids to Support GSI-191” (ML080650350)

- Revised Content Guide for Generic Letter 2004-02 Supplemental Responses ML073110389 (pkg)

- Revised Review Guidance for Staff Review for Licensee Responses to Generic Letter 2004-02 (Pkg - ML080230234, Letter - ML080230112, Enclosure 1 - Strainer Head Loss and Vortexing - ML080230038, Enclosure 2 – Coatings - ML080230462, Enclosure 3 Chemical Effects - ML080380214)

Enclosure:
As stated

- Pressurized Water Reactor Owners Group Responses to the NRC Request for Additional Information (RAI) on WCAP-16793-NP. "Evaluation of Lonm-Term Cooling Considering Particulate, Fibrous and Chemical Debris in the Recirculating Fluid" (PA-EE-0312) (ML073050471)

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