

October 29, 2004

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

FROM: Marsha K. Gamberoni, Chief */RA/* John P. Segala for/
Advanced Reactors and Regulatory Effectiveness Branch
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SUBJECT: GENERIC ISSUE MANAGEMENT CONTROL SYSTEM (GIMCS)
REPORT – FOURTH QUARTER FY 2004

The GIMCS Report for the Fourth Quarter of FY 2004 is attached for your information. Two new generic issues were identified for initial screening:

- 197 Iodine Spiking Phenomena
- 198 Hydrogen Combustion in PWR Piping

The following is a summary of significant progress made during the reporting period in resolving the open generic safety issues (GSIs):

REACTOR GSIs

GSI-80, Pipe Break Effects on Control Rod Drive (CRD) Hydraulic Lines in the Drywells of Boiling Water Reactor (BWR) MARK I and II Containments: RES completed a technical analysis of the effects of postulated pipe breaks inside BWR Mark I and Mark II containments in July 2004. A finite element code was used to perform nonlinear transient analysis to determine the impact of pipe break impulsive loads on drywell steel shell and control rod drive (CRD) bundles. The results of the analysis indicated that the CRD bundles will not be impacted by breaks in recirculation, steam, and feedwater system piping after a postulated break. As a result, this issue has been scheduled for closure in June 2005.

GSI-156.6.1, Pipe Break Effects on Systems and Components: The finite element code (outlined in GSI-80 above) was also used to determine the impact of impulsive loads due to pipe breaks in feedwater, main steam, and recirculation system piping on the drywell steel. Results indicated that the structural integrity and leak-tightness of drywell steel shells will not be compromised by piping impact. RES plans to review the piping configurations of three plants before making any recommendations.

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GSI-185, Control of Recriticality Following Small-Break Loss-of-Coolant Accident (LOCA) in Pressurized Water Reactors (PWRs): The RES study of "Boron Dilution Effects During Small-Break LOCAs in PWRs" was completed with the conclusion that there would be no recriticality for CE and Westinghouse reactors, based on relatively small loop seal volumes. The RES findings were presented to the ACRS on October 7, 2004. RES is proceeding with closing the issue without imposition of any new regulatory requirements for all Framatome B&W, Westinghouse, and Combustion Engineering plants.

GSI-188, Steam Generator Tube Leaks/Ruptures Concurrent with Containment Bypass: In July 2004, a draft study was completed which showed that, even if a few percent of steam generator tubes are locked to the tube support plates by crevice deposits or corrosion products, the dynamic loads associated with an MSLB will have little impact on the integrity of the tubes, unless extensive circumferential cracking is present. This study will be issued by the staff as a NUREG report, and the issue is scheduled to be closed in June 2005.

GSI-189, Susceptibility of Ice Condenser and MARK III Containments to Early Failure from Hydrogen Combustion during a Severe Accident: NRR held a public meeting with stakeholders on September 21, 2004, to gather input on the draft design criteria for a backup power supply for hydrogen igniters. The criteria were generally accepted, except that the BWR Owners' Group believed that the one-hour time limit was too short for BWR plants to connect to a power source without making the system automatic. The stakeholders are willing to consider voluntary alternatives for providing backup power sources, and NRR will consider options other than rulemaking.

GSI-191, Assessment of Debris Accumulation on PWR Sump Performance: NRR issued Generic Letter 2004-02 on September 13, 2004, requiring licensees of operating PWRs to perform plant-specific evaluations of the recirculation functions of their emergency core cooling and containment spray systems. The NRR safety evaluation of the methodology proposed by the industry for use in performing the plant-specific evaluations was reviewed by the ACRS in October 2004.

GSI-196, Boral Degradation: This issue addresses a concern regarding degradation mechanisms that could impair the effectiveness of Boral as a neutron absorber in spent fuel casks. Initial screening of the issue was completed by the Generic Issue Review Panel in August 2004, and the recommendation to continue work on the issue was forwarded to the RES Director for approval.

At the end of the reporting period, nine reactor GSIs remained to be resolved, including four GSIs that were transferred from RES to NRR for regulation and guidance development (see Table 1). Three generic issues remained to be screened (see Table 9).

NON-REACTOR GSIs

NMSS-14, Surety Estimates for Groundwater Restoration at In Situ Leach Facilities: U.S. Geological Survey (USGS) completed its study on the "Consideration of Geochemical Issues in Groundwater Restoration at Uranium In Situ Leach Mining Facilities" in July 2004. This study will be published as NUREG report.

At the end of the reporting period, three non-reactor GSIs remained to be resolved (see Table 14).

I will continue to keep you informed of progress in resolving the remaining unresolved reactor and non-reactor GSIs as well as any major problems that might surface during the course of their resolution.

Attachment: GIMCS Report, October 2004

At the end of the reporting period, three non-reactor GSIs remained to be resolved (see Table 14).

I will continue to keep you informed of progress in resolving the remaining unresolved reactor and non-reactor GSIs as well as any major problems that might surface during the course of their resolution.

Attachment: GIMCS Report, October 2004

cc:

- J. Strosnider, RES R. Barrett, NRR R. Torres, NMSS L. Reyes, Region II
- J. Rosenthal, RES J. Donoghue, NRR J. Bell, IRM J. Caldwell, Region III
- M. Mayfield, RES J. Birmingham, NRR J. Larkins, ACRS B. Mallett, Region, IV
- F. Cherny, RES S. Black, NRR W. Usilton, IRM S. Duraiswamy, ACRS
- S. Schneider, NRR J. Strosnider, NMSS J. Dyer, NRR
- B. Sheron, NRR M. Federline, NMSS H. Miller, Region I

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