SECY-99-185

July 16, 1999

FOR: The Commissioners

FROM: William D. Travers /s/
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SUBJECT: SUMMARY OF ACTIVITIES RELATED TO GENERIC SAFETY ISSUES

PURPOSE:

To provide the annual summary report on activities related to generic safety issues (GSIs).

BACKGROUND:

It has been the practice of the staff to provide the Commission with an annual update of the progress made in resolving GSIs. Further, in a staff requirements memorandum dated May 8, 1998, in response to SECY-98-030, "Implementation of DSI-22, Research," the Commission directed the staff to provide an annual summary of activities related to open GSIs.

The current structure of the Generic Issues Program was established in the 1980s and was intended to address reactor generic issues, the resolution of environmental issues, improvement in the licensing process, and the elimination of requirements that are overly conservative or unnecessarily restrictive or costly. Currently, the NRC process for addressing generic issues from all sources, operational and non-operational, is delineated in NUREG-0933, "A Prioritization of Generic Safety Issues." In addition, Management Directive 8.5, "Operational Safety Data Review," addresses the roles of each affected office in the identification of generic issues resulting from the review of operational data.

In 1998, the staff conducted a self-assessment of the generic issues process and recommended changes to improve efficiency, timeliness, and clarity. The staff is developing a new Management Directive 6.4, "Generic Issue Program," to institute these changes. A draft of this directive has been prepared and is now in interoffice review. The Advisory Committee on Reactor Safeguards (ACRS) has been briefed on the revised process and the new directive, and ACRS comments have been incorporated. Consistent with the ACRS recommendation, the staff intends to implement a trial application of the new directive beginning in July 1999.

The description of the progress on the resolution of GSIs which follows is based on the currently approved process delineated in NUREG-0933. The process for addressing GSIs currently consists of six steps: identification, prioritization, resolution, imposition, implementation, and verification. Generally, safety concerns associated with operating events, research results, or risk assessments form the basis for the identification of GSIs by the staff, the ACRS, industry, or the public. After a GSI is identified, it is then prioritized to determine whether resources should be expended in pursuit of a resolution. This prioritization step is generally completed with a quantitative analysis of the risk reduction potential of the issue and a priority ranking of HIGH, MEDIUM, LOW, or DROP. Those GSIs with rankings of HIGH or MEDIUM would be able to meet the "substantial increase in the overall protection of the public health and safety" requirement of 10 CFR 50.109 and are selected for resolution. No additional action is taken on GSIs in the LOW-priority and DROP categories.

Resolution of a GSI requires a cost-benefit analysis of a proposed solution after consideration of the options to improve safety. Some action is taken on those for which the cost-benefit analysis shows that "the direct and indirect costs are justified in view of this increased protection" (10 CFR 50.109). The ACRS normally reviews the prioritization and resolution of GSIs associated with nuclear power plants. The schedules for resolution of GSIs allow adequate time for ACRS review and resolution of ACRS comments. In the imposition step, the staff issues requirements that may result from the resolution of the GSI, and the affected licensees are required to prepare schedules for implementing these requirements. Implementation covers the step in which the affected licensees perform actions on their operating plants to satisfy the commitments made during the imposition step. Finally, verification is accomplished by NRC inspection of licensee actions.

GSIs associated with nuclear reactor power plants are prioritized by the Office of Nuclear Regulatory Research (RES) using the methodology of NUREG-0933. Most of the reactor GSIs that meet the requirement of substantial increase in public health and safety are assigned to RES for resolution. The Office of Nuclear Reactor Regulation (NRR) is assigned those reactor GSIs that require extensive interface with operating plants. RES is responsible for: (1) resolving GSIs through the conduct of research; (2) tracking the status of all generic issues through the identification, prioritization, and resolution steps in the agency-wide Generic Issue Management Control System (GIMCS); and (3) documenting the prioritization and resolution results in NUREG-0933 and making it publicly available on the NRC Website. NRR is responsible for managing the imposition, implementation, and verification of those GSIs that result in new requirements. Tracking GSIs through these final three steps is accomplished with the Safety Issues Management System (SIMS). The ACRS has contributed to the prioritization and resolution of GSIs associated with nuclear power plants. Resolution of GSIs will continue to be coordinated with the ACRS and schedules for resolution will allow adequate time for ACRS review and resolution of ACRS concerns.

Over the years, the Generic Issues Program focused on GSIs related to nuclear power plants. However, following a Commission briefing on mechanisms for addressing GSIs on December 19, 1995, the staff expanded the program to include non-reactor GSIs identified by the Office of Nuclear Material Safety and Safeguards (NMSS). For non-reactor GSIs, NMSS is responsible for managing all six steps of the program described above, in accordance with the guidelines of NMSS Policy and Procedures Letter 1-57.

DISCUSSION:

Reactor GSIs

Since the last report to the Commission in SECY-98-166, the following two new reactor GSIs were identified for prioritization:

185	Control of Recriticality Following Small-Break LOCA in PWRs
186	Potential Risk and Consequences of Heavy Load Drops

These two new GSIs are scheduled to be prioritized by December 1999.

Three LOW-priority GSIs were reprioritized based on new information, and three GSIs (two HIGH and one MEDIUM) were resolved with no new or revised requirements for licensees. Reactor GSIs prioritized and resolved during the past year are listed in Attachment 1. Currently, nine HIGH-priority and three MEDIUM-priority reactor GSIs remain to be resolved, and the current schedules for the resolution of these twelve issues are listed in Attachment 2.

Non-Reactor GSIs

During the reporting period, the following four new non-reactor GSIs were identified for prioritization:

NMSS-13	Use of Different Dose Models to Demonstrate Compliance
NMSS-14	Surety Estimates for Groundwater Restoration at In-Situ Leach Facilities
NMSS-15	Adequacy of Part 150 Criticality Requirements
NMSS-16	Adequacy of 0.05 Weight Percent Limit in Part 40

The above four GSIs were prioritized, and five GSIs (one HIGH and four MEDIUM) were resolved with no new or revised requirements for licensees. Non-reactor GSIs prioritized and resolved since the last report to the Commission are listed in Attachment 1. Six non-reactor GSIs remain to be resolved, and the current schedules for the resolution of these issues are listed in Attachment 2.

CONCLUSION:

The staff will continue to use the processes of NUREG-0933 and NMSS Policy and Procedures Letter 1-57 as well as the procedures of Management Directive 8.5 to identify, prioritize, and resolve reactor and non-reactor GSIs, until the new process is approved by the Commission. The staff will continue to provide an annual update to the Commission and will inform the Commission of any significant results of the ongoing assessment of these areas.

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Attachments:
1. GSIs Prioritized and Resolved since July 6, 1998
2. Unresolved GSIs as of June 28, 1999

ATTACHMENT 1

GSI Number	Title	Ident. Date	Priority	Lead Office	Status
107	Generic Implications of Main Transformer Failures	04/1996	Drop	RES	Prioritized. Consideration of new information changed the priority from LOW to DROP.
165	Spring-Actuated Safety and Relief Valve Reliability	10/1992	High	RES	Resolved with no new requirements.
171	ESF Failure from LOOP Subsequent to a LOCA	02/1995	High	RES	Resolved with no new requirements.
B-61	Allowable ECCS Equipment Outage Periods	1983	Medium	RES	Resolved with no new requirements.
I.F.2(1)	QA - Assure the Independence of the Organization Performing the Checking Function	04/1997	Low	RES	Prioritized. Consideration of new information did not change the priority.
II.D.2	Research on Relief and Safety Valve Test Requirements	04/1997	Drop	RES	Prioritized. Consideration of new information changed the priority from LOW to DROP.

NMSS-6	Criticality Concerns With Unusual Moderators in Low-Level Waste	08/1997	Medium	NMSS	Resolved with no new requirements.
NMSS-9	Amersham Radiography Source Cable Failures	05/1998	High	NMSS	Resolved with no new requirements.
NMSS-11	Spent Fuel Dry Cask Weld Cracks	05/1998	Medium	NMSS	Resolved with no new requirements.
NMSS-12	Inadequate Transportation Packaging Puncture Tests	05/1998	Medium	NMSS	Resolved with no new requirements.
NMSS-13	Use of Different Dose Models to Demonstrate Compliance	06/1998	Medium	NMSS	Prioritized and resolved with no new requirements.
NMSS-14	Surety Estimates for Groundwater Restoration at In-Situ Leach Facilities	07/1998	Medium	NMSS	Prioritized. Resolution being pursued (see Attachment 2).
NMSS-15	Adequacy of Part 150 Criticality Requirements	06/1998	Medium	NMSS	Prioritized. Resolution being pursued (see Attachment 2).
NMSS-16	Adequacy of 0.05 Weight Percent Limit in Part 40	06/1998	Medium	NMSS	Prioritized. Resolution being pursued (see Attachment 2).

ATTACHMENT 2

Unresolved GSIs as of June 28, 1999

GSI Number	Title	Ident. Date	Priority	Lead Office	Status
23	Reactor Coolant Pump Seal Failures	12/1980	High	RES	The staff has concluded that generic imposition of new requirements is not appropriate because of significant design differences from plant to plant. A Task Action Plan has been developed to perform a limited number of plant-specific reviews to determine if plant-specific actions are required. Resolution is scheduled for December 1999.
145	Actions to Reduce Common Cause Failures	09/1988	High	RES	A technical approach for the resolution of this issue has been developed. It is anticipated that the ACRS will review this resolution during its September meetings, the first opportunity for placing the issue on the Committee's schedule. Resolution is scheduled for October 1999.
158	Performance of Safety-Related Power-Operated Valves Under Design Basis Conditions	09/1991	Medium	RES	The staff concluded that no new requirements are necessary. A technical approach utilizing industry voluntary initiatives and guidelines for resolving this issue has been developed in accordance with the Commission's intent to rely on industry initiatives as an alternative to NRC regulatory activities. The ACRS has raised concerns which may be addressed by industry initiatives. The industry initiatives are in the formative stage and the staff plans to follow them for assurance that they will provide the necessary level of attention to ensure that the valves perform adequately under design basis conditions.
163	Multiple Steam Generator Tube Leakage	06/1992	High	NRR	A proposed resolution has been prepared, but finalization and implementation depends on the NRC work with industry on a possible voluntary industry initiative.
168	Environmental Qualification of Electrical Equipment	04/1993	High	RES	Work on the technical basis (i.e., pre-aging and testing of low voltage instrumentation and control electrical cables) for a possible resolution is ongoing. Resolution is scheduled for September 2000.
170	Reactivity Transients and Fuel Damage Criteria for High Burn-up Fuel	01/1995	High	RES	Work on the technical basis (i.e., fuel damage criteria at high burn-up) for a possible resolution is ongoing, and includes cooperative research with EPRI. Development of a technical basis for a possible resolution involves a long-term research effort. There is no scheduled resolution date.
172	Multiple System	10/1989	High	RES	Work performed by the industry is being reviewed to determine whether it adequately resolves the issue without new or revised requirements. There is no

	Responses Program (MSRP)				scheduled resolution date.
173.A	Spent Fuel Storage Pool: Operating Facilities	02/1996	High	NRR	The NRC is working with industry to develop new and revised guidance intended to be contained in a standard and incorporated into an NRC regulation. Resolution is scheduled for August 2000.
190	Fatigue Evaluation of Metal Components for 60-Year Plant Life	08/1996	High	RES	Work on the technical basis (i.e., risk associated with fatigue failures) for a possible resolution is ongoing. The present focus is on making improvements to the computer code for this type of analysis. Use of the current version of the code to resolve the issue would result in unnecessary burden to the industry. Resolution is scheduled for December 1999.
191	Assessment of Debris Accumulation on PWR Sump Performance	09/1996	High	RES	Development of a technical basis for a possible resolution involves a long-term research effort on coatings and debris transport to determine the potential severity of PWR sump blockage effects. Resolution is scheduled for September 2001.
B-17	Criteria for Safety-Related Operator Actions	06/1978	Medium	RES	A proposed resolution (i.e., NRC endorsement of an industry standard) has been developed, but alternative guidance is being considered before finalizing a resolution with new or revised requirements. Resolution is scheduled for March 2000.
B-55	Improve Reliability of Target Rock Safety Relief Valves	06/1978	Medium	NRR	Three activities currently being performed by the industry are being reviewed to determine whether they adequately resolve the issue. The resolution has been extended to accommodate the BWR Owners' Group final recommendation involving industry data that can only be collected during outages and which will not be available until later in 1999. Resolution is scheduled for December 1999.
NMSS-7	Criticality Benchmarks Greater than 5% Enrichment	05/1998	Low	NMSS	The staff is developing and confirming the adequacy of tools for validating critically calculations, including requests to process higher enrichments, to be used in licensing nuclear facilities. Resolution is scheduled for November 2000.
NMSS-8	Year 2000 Computer Problem - Non-reactor Licensees	05/1998	High	NMSS	The staff will determine whether safety-related problems have been identified and addressed. NMSS inspectors have been asking Y2K questions during inspections. Major fuel cycle facilities have reported the status of their Y2K readiness programs as required by GL 98-03. There have been no identified risk-significant Y2K concerns for fuel facilities, or for NRC-regulated material used by materials licensees. NMSS will staff the Operations Center with a Fuel Facility Specialist during the transition from 1999 to 2000. Resolution is scheduled for January 2000.
NMSS-10	Troxler Gauge Source Rod Weld Failures	05/1998	Medium	NMSS	The staff will work with the Agreement State of North Carolina to ensure that cracked source rods on Troxler moisture density gauges are repaired or replaced, and ensure the manufacturing process is reviewed/modified to reduce the potential for recurrence. Resolution is scheduled for August 1999.
NMSS-14	Surety Estimates for Groundwater Restoration at In-Situ Leach Facilities	06/1998	Medium	NMSS	This task is to develop a methodology for estimating the cost of groundwater restoration. The project is currently on hold and will be re-evaluated to determine if it should be modified or terminated, in response to a Commission response to a SECY-99-013, regarding redefinition of regulatory responsibility at in-situ leach facilities. Resolution is on hold.
NMSS-15	Adequacy of Part 150 Criticality Requirements	06/1998	Medium	NMSS	The staff plans to develop emplacement criticality guidance for use by licensees, Agreement States, and the NRC. The staff is preparing a Federal Register Notice (FRN) on Agreement State compatibility. The draft FRN will be posted on the NRC Website in a password-protected document for Agreement State review. After comments are incorporated, a final FRN will be published. Resolution is scheduled for January 2000.
NMSS-16	Adequacy of 0.05 Weight Percent Limit in Part 40	06/1998	Medium	NMSS	The staff will determine whether the limit on "unimportant quantities" of source material adequately protects public health and safety. Options are being prepared for the Commission on how to proceed with jurisdictional and technical issues on regulation of source material. After Commission review and SRM issuance, staff will determine by January 2000 how to proceed.