

March 7, 2003

MEMORANDUM TO: William D. Travers  
Executive Director for Operations

FROM: Samuel J. Collins, Director                    **/RA by B W Sheron for/**  
Office of Nuclear Reactor Regulation

Ashok C. Thadani, Director                    **/RA by Jack Strosnider for/**  
Office of Nuclear Regulatory Research

SUBJECT:                    ACTIONS RESULTING FROM THE DAVIS-BESSE LESSONS  
LEARNED TASK FORCE REPORT RECOMMENDATIONS -  
CORRECTION\*

Your memorandum dated January 3, 2003, directed the Office of Nuclear Reactor Regulation (NRR) and the Office of Nuclear Regulatory Research (RES) to develop an overall plan for accomplishing the actions recommended in the November 26, 2002, memorandum from the Senior Management Review Team (RT) that reviewed the Davis-Besse Lessons Learned Task Force (LLTF) Report.

The purpose of this memorandum is to describe the overall plan for accomplishing the LLTF recommendations. The plan has three elements: (1) the development of action plans for high-priority items, (2) a plan for addressing lower priority items, and (3) provisions for reporting the status of implementation of each item.

### ACTION PLANS

The RT sorted the recommendations into four overarching groups, assigned priorities to the individual items within each group, and proposed action plans or focused activities to address the high-priority items. The NRR and RES staffs worked together to develop four action plans, which address, as a minimum, the high-priority items in each group. With one exception, the plans focus on the LLTF recommendations. In the case of operating experience, it was determined that expanding the scope beyond the LLTF recommendations was appropriate in order to develop an effective, agency-wide program. Although not required, the plans include some lower priority items that are closely related to the high-priority items. While many action plan activities are new, the plans also incorporate ongoing activities initiated to address some of the concerns identified by the LLTF. Many action plan activities depend on interaction with the industry, and schedules are based on assumed completion dates of ongoing industry initiatives. After the plans are made public, the staff will meet with key stakeholders in a public meeting to discuss these activities. The plans will be revised as appropriate based on input from this meeting. The staff will conduct future meetings with external stakeholders as needed to ensure that industry initiatives related to action plan activities are properly considered.

The four action plans were developed in accordance with NRR Office Instruction LIC-502, "Procedure for Development, Implementation, and Management of Action Plans," and are described below.

---

\* This memorandum and the attached action plans replace the February 28, 2003, version. This version includes an editorial correction on page 2.

1. Assessment of Stress Corrosion Cracking

This plan addresses the five high-priority recommendations, which include the collection of plant experience with stress corrosion cracking (SCC) and boric acid corrosion in order to provide a basis for revising inspection requirements and developing improved inspection program guidelines. The two lower priority items in this group are also addressed. SCC of reactor vessel head (RVH) nozzles has been studied for several years through U.S. Nuclear Regulatory Commission (NRC) and industry research programs, but the staff has increased its attention in this area after discovery of circumferential cracking on domestic RVH nozzles in early 2001. Through Bulletins 2001-01 and 2002-02 and orders, enhanced inspection and reporting requirements have been established on an interim basis. Following the discovery of significant degradation of the reactor head at Davis-Besse due to boric acid corrosion, Bulletin 2002-01 was issued to obtain information needed to determine the adequacy of PWR plant boric acid corrosion control programs.

This action plan also addresses long-term actions to revise the American Society of Mechanical Engineers (ASME) Code Section XI and NRC regulatory documents, in order to ensure inspection requirements for reactor pressure vessel heads and other primary system pressure boundary components reflect the knowledge gained from industry and NRC experience with SCC and boric acid corrosion. A technical basis for revised inspection requirements will be developed from ongoing and planned research programs and information obtained from plant inspections pursuant to the bulletins and orders. This will be used to evaluate industry initiatives to revise ASME Code requirements. In addition, NRC inspection program guidance will be revised to ensure more effective review and evaluation of licensee programs for reactor vessel and primary system component inspection and boric acid corrosion control. The NRR Division of Licensing Project Management (NRR/DLPM) has lead responsibility for this action plan (Attachment 1).

2. Assessment of Operating Experience, Integration of Operating Experience Into Training, and Review of Program Effectiveness

This plan addresses the seven high-priority recommendations, which include programmatic improvements for review of operating experience and enhancements to inspector training and qualification. A discussion of long-term actions follows below. However, as an interim, short-term activity beyond the scope of this plan, NRR will review a sample of licensee actions in response to previous generic communications. The sampling will be based on potential safety significance and relevant operating experience information. This activity is intended to verify that the actions taken by licensees were appropriate and to determine if any prompt follow-up actions are warranted.

Agency management recognized prior to the Davis-Besse event that the effectiveness of the overall agency operating experience program needed to be evaluated. In December 2002, an operating experience working group was formed. The group consists of management and senior staff from NRR and RES with responsibility for operating experience functions. The working group has determined that the required actions resulting from the RT recommendations can be accomplished as part of the group's proposed evaluation of the overall operating experience programs. The working group's intended methodology for evaluating and changing, as necessary, the agency-wide program involves the following activities: (1) identifying

desirable program objectives and attributes; (2) defining the functions and processes to meet those objectives and attributes; (3) reviewing and evaluating current processes; (4) identifying areas for improvement; (5) implementing identified improvements; and (6) establishing processes to monitor the effectiveness of changes. This methodology has been translated into the milestones of the action plan.

An interoffice (NRR and RES) task force will perform this agency-wide operating experience program review and make specific proposals to change, as appropriate, current agency operating experience programs to better align them with program objectives and attributes. This review will also assess and provide recommendations on the agency's independent operating experience review function. An interoffice (NRR, RES and Regions) executive steering committee will provide oversight to the task force and provide direction to the staff upon receipt of the task force's proposals. Process improvements will be implemented as they are ready and will not be delayed pending consideration of other changes. The focus of this action plan is on the reactor program, however, coordination with other program offices that collect and evaluate operating experience, particularly Nuclear Material Safety and Safeguards (NMSS) and Nuclear Security and Incident Response (NSIR), will occur during execution of this action plan. The NRR Division of Regulatory Improvement Programs (NRR/DRIP) has lead responsibility for this action plan (Attachment 2). However, execution of the action plan will largely be coordinated by the interoffice task force and steering committee.

### 3. Evaluation of Inspection, Assessment, and Project Management Guidance

This plan addresses the three high-priority recommendations and three closely-related low-priority recommendations. The action plan contains three sets of milestones since the recommendations address different topics: milestones for changes to the NRC's inspection program to ensure that long-standing unresolved problems receive sufficient inspection, milestones for the development of guidance to assess the impacts of Inspection Manual Chapter 0350 on regional resource allocations, and milestones for the development of guidance to ensure that decisions to allow deviations from agency guidelines in generic communications are adequately documented. The NRR Division of Inspection Program Management (NRR/DIPM) has lead responsibility for this action plan (Attachment 3).

### 4. Assessment of Barrier Integrity Requirements

This plan addresses the six high-priority recommendations, which include improvements to reactor coolant leakage detection requirements and performance indicators. With respect to leakage detection requirements, the plan calls for a comprehensive review and evaluation of plant experience and current leakage detection systems, a review of the technical bases for the current leak rate requirements, and an evaluation of state-of-the-art systems capable of detecting leaks and cracks. Appropriate recommendations will then be made for improving leak rate limits, plant alarm response procedures and inspection guidance, and for using enhanced on-line leakage detection systems on critical components. A determination will then be made as to which recommendations should be imposed as new requirements, and changes to Technical Specifications will also be addressed, as appropriate. In addition to the long term activities of this action plan, NRR has initiated a review of leakage rates and leakage calculation methods at licensee facilities and will propose additional interim measures if warranted.

The action plan includes milestones for the review and improvement of barrier integrity performance indicators (PIs). The first phase continues an ongoing effort to develop an improved barrier integrity PI based on current requirements and measurements taken at plants. The second phase will address development of additional barrier integrity PIs to track the number, duration, and rate of primary system leaks that have been identified but not corrected. If the previously discussed actions regarding leakage detection result in new leakage limitations, the barrier integrity PIs will be examined again to determine if they should be modified. In parallel with these efforts, the feasibility of developing a risk-informed barrier integrity PI based on measures other than just reactor coolant system leakage will be researched. The RES Division of Engineering Technology (RES/DET) has lead responsibility for this action plan (Attachment 4).

### PLANS FOR LOWER PRIORITY RECOMMENDATIONS

The RT recommended that lower priority items be integrated into the operational planning activities for the lead offices, using the agency's Planning, Budgeting, and Performance Management (PBPM) process. As previously noted, some lower priority items which are closely related to high-priority items have been incorporated into the action plans and are identified in the applicable steps. The PBPM process will be used to establish responsibilities, resource estimates, and schedules for the remaining items.

The medium priority recommendations include an effectiveness review of actions taken in response to past lessons-learned reviews. Since this review may provide some generic insights to be considered in implementing the action plan activities and other recommendations, it will be targeted for prompt completion when addressed in the PBPM process.

The initial determination of responsibility and schedule for medium and low priority recommendations will be included in the first semiannual status report.

### STATUS REPORTING

In accordance with Office Instruction LIC-502, action plan status will be updated quarterly and reported to office directors. For NRR, this will be accomplished by updating the Director's Quarterly Status Report (DQSR). For RES, this will be accomplished by revisions to the Operating Plan. The lower priority items not included in an action plan will be updated semiannually. The status of implementation of all LLTF recommendations will be reported to the EDO and the Commission semiannually. Attachment 5 provides a recommended format, which lists each recommendation as a line item and indicates lead responsibility, scheduled completion date, and current status of implementation. As the action plans progress, it is anticipated that needed changes may be identified. Such changes will be included in the semiannual report. NRR will be the lead office for compiling the semiannual report. The point of contact will be Brendan Moroney, Project Manager, NRR/DLPM, telephone: 415-3974. The first semiannual report will be issued by August 31, 2003. Thereafter, updated status reports will be issued at the end of February and August each year.

RESOURCE IMPLICATIONS

Your memorandum requested that resource implications and any impact on existing work and schedules be provided with the plan. The planned activities are currently projected to extend into FY06, with estimated resource requirements as shown in the following table.

OFFICE	FY03	FY04	FY05	FY06
NRR	7.0 FTE	7.0 FTE	4.5 FTE	3.7 FTE
RES	3.9 FTE +\$1205K	5.7 FTE +\$1885K	2.6 FTE +\$760K	0.5 FTE +\$1070K
REGIONS	0.5 FTE	0.8 FTE	0.5 FTE	0.4 FTE

Approximately half of the FY03 totals represent activities currently in progress within NRR and RES to address reactor pressure vessel head inspection and boric acid control program requirements, and operating experience program improvements. The additional work in FY03 and beyond will be addressed through the PBPM process.

Attachments:

1. Stress Corrosion Cracking Action Plan
2. Operating Experience Action Plan
3. Inspection Program Action Plan
4. Barrier Integrity Action Plan
5. Semiannual Report Format

DISTRIBUTION

Non-Public

NRR Mail Room (YT020030008)

EDO Reading file

W. Kane

P. Norry

C. Paperiello

J. Craig

S. Collins

B. Sheron

W. Borchardt

M. Case

J. Zwolinski

R. Barrett

D. Matthews

B. Boger

G. Holahan

H. Berkow

S. Moore

A. Howe

B. Moroney

T. Reis

I. Jung

J. Jacobson

A. Thadani

M. Mayfield

F. Eltawila

S. Newberry

C. Santos

T. Clark

H. Miller, RI

L. Reyes, RII

J. Dyer, RIII

E. Merschoff, RIV

RESOURCE IMPLICATIONS

Your memorandum requested that resource implications and any impact on existing work and schedules be provided with the plan. The planned activities are currently projected to extend into FY06, with estimated resource requirements as shown in the following table.

OFFICE	FY03	FY04	FY05	FY06
NRR	7.0 FTE	7.0 FTE	4.5 FTE	3.7 FTE
RES	3.9 FTE +\$1205K	5.7 FTE +\$1885K	2.6 FTE +\$760K	0.5 FTE +\$1070K
REGIONS	0.5 FTE	0.8 FTE	0.5 FTE	0.4 FTE

Approximately half of the FY03 totals represent activities currently in progress within NRR and RES to address reactor pressure vessel head inspection and boric acid control program requirements, and operating experience program improvements. The additional work in FY03 and beyond will be addressed through the PBPM process.

Attachments:

1. Stress Corrosion Cracking Action Plan
2. Operating Experience Action Plan
3. Inspection Program Action Plan
4. Barrier Integrity Action Plan
5. Semiannual Report Format

DISTRIBUTION:

See next page

**Package: ML030660105**

**Attachment 5: ML030590184**

**Incoming: ML030590075**

**Attachment 1: ML030590084**

**Attachment 2: ML030590142**

**Attachment 3: ML030590149**

**Attachment 4: ML030590156**

**Adams Accession No. ML030660063**

\* See previous concurrence

OFFICE	NRR/Lead PM	Tech Editor	NRR/PDII/D	NRR LT	NRR/D
NAME	BMoroney*	PKleene*	HBerkow*	JZwolinski*	BWSheron for: SCollins
DATE	02/27/03	2 /26 /03	02/27/03	02/27/03	03/07/03

OFFICE	RES/DET/D	RES/DSARE/D	RES/DRAA /D	RES/D
NAME	MMayfield*	FEltawila*	SNewberry*	JStrosnider for: ATHadani
DATE	02/27/03	02/27/03	02/27/03	03/07/03