

**DAVIS-BESSE LESSONS LEARNED TASK FORCE
RECOMMENDATIONS REGARDING OPERATING
EXPERIENCE PROGRAM EFFECTIVENESS
(FINAL UPDATE)**

<u>TAC No.</u> MB7280	<u>Description</u> Develop Operating Experience Action Plan	Last Update: 03/31/05 Lead Division: DIPM Supporting Divisions: DE, DSSA, & DLPM
MB7347	Overall Assessment of Agency's Operating Experience Program	Supporting Offices: RES & Regions
MB8220	Operating Experience Task Force Activities (NRR)	
KC0056	Operating Experience Task Force Activities (RES)	
MC2066	Operating Experience Task Force Plan Development	
MC3378	Operating Experience Program Implementation	
MB8034	Evaluation of Past Generic Communications	

Milestone	Date (T=Target) (C=Complete)	Lead	Support
Part I - Operating Experience Program: Objective Phase			
1. Form Task Force with Steering Committee and develop Charter.	03/03 (C) ML030900117	NRR/RES	
b. Identify desirable agency operating experience program objectives and attributes, and	04/03 (C)	Task Force	DIPM, DLPM, DE, DSSA, DET/RES, DRAA/RES, DSARE/RES , Regions
2.a. Provide documented staff proposals of operating experience program objectives and attributes.	04/03 (C) ML031200312 ML031490535		
2.b. Obtain executive management endorsement.	05/03 (C) ML031350156		

Milestone	Date (T=Target) (C=Complete)	Lead	Support
Part II - Operating Experience Program: Assessment Phase			
1. Define functional needs/areas and processes to meet objectives and attributes.	9/03 (C)	Task Force	DIPM, DLPM, DE, DSSA, DET/RES, DRAA/RES, DSARE/RES, Regions
2. Review and evaluate current processes. [LLTF 3.1.6(1)]	11/03 (C) ML033350063	Task Force	DIPM, DLPM, DE, DSSA, DET/RES, DRAA/RES, DSARE/RES, Regions
3. Identify areas for improvements. [LLTF 3.2.4(1)]	11/03 (C) ML033350063	Task Force	DIPM, DLPM, DE, DSSA, DET/RES, DRAA/RES, DSARE/RES, Regions
4. Task Force issues draft report.	09/03 (C) ML032740058	Task Force	
5. Task Force provides final report to Steering Committee documenting its specific program improvement proposals.	11/03 (C) ML033350063	Task Force	
6. Steering Committee sends report back to line management for implementation detail.	01/04 (C) ML040080005	Steering Committee	
6.a Responsible organizations achieve consensus on proposals to implement.	01/04 (C) ML040560144	NRR/RES	Regions
Part III - Operating Experience Program: Implementation Phase			

Milestone	Date (T=Target) (C=Complete)	Lead	Support
<p>1. Develop plan for program development based on 6.a in Part II.</p> <p>1.a Complete Operating Experience framework (Draft Management Directive/Handbook) [LLTF 3.1.6(2)]</p> <p>1.b Other program enhancements: (1) Handling of foreign operating experience [LLTF 3.1.6(3)] (2) Strengthen inspection guidance [LLTF 3.3.4(2)]</p>	<p>04/04 (C) ML041180024</p> <p>12/04 (C)</p> <p>03/03 (C) LIC-401</p> <p>09/03 (C) IP 71152</p>	<p>NRR/RES</p>	<p>Regions OCIO</p>
<p>2. Establish processes to monitor effectiveness.</p>	<p>03/05 (C)</p>	<p>NRR/RES</p>	<p>Regions</p>
<p>Part IV - Inspection Program Enhancements</p>			
<p>1. Provide training and reinforce expectations to NRC managers and staff members to address the following areas: (1) maintaining a questioning attitude in the conduct of inspection activities; (2) developing inspection insights stemming from the DBNPS event relative to symptoms and indications of RCS leakage; (3) communicating expectations regarding the inspection follow-up of the types of problems that occurred at DBNPS; and (4) maintaining an awareness of surroundings while conducting inspections. Training requirements should be evaluated to include the appropriate mix of formal training and on-the-job training commensurate with experience. Mechanisms should be established to perpetuate these training requirements. [LLTF 3.3.1(1)]</p>	<p>12/03 (C)</p>	<p>DIPM</p>	<p>DE, DSSA, DET/RES, Regions</p>
<p>2. Implement actions to maintain NRC</p>	<p>12/03 (C)</p>	<p>DIPM</p>	<p>DE,</p>

Milestone	Date (T=Target) (C=Complete)	Lead	Support
expertise by ensuring that NRC inspector training includes: (1) boric acid corrosion effects and control; and (2) PWSCC of nickel based alloy nozzles. [LLTF 3.3.5(1)]			DSSA, DET/RES, Regions

Description: Initiatives to assess and improve the agency's reactor operating experience program has been initiated and ongoing for some time. Also, the report of the Davis-Besse Lessons Learned Task Force (LLTF), issued on September 30, 2002, contains a number of recommendations on operating experience program improvements. It is important to note that opportunities to improve access and use of operating experience information will continue in parallel with the systematic assessment of the agency's operating experience program described in this action plan.

Historical Background: Up until 1999, the Office of Analysis and Evaluation of Operational Data (AEOD) performed various activities pertinent to systematically collecting and evaluating operating experience, and communicating the lessons learned to the NRC staff and the regulated industry. With the abolishment of AEOD per SECY-98-228, "Proposed Streamlining and Consolidation of AEOD Functions and Responsibilities," October 1, 1998, the roles and responsibilities of AEOD associated with the operating experience program were transferred to the Offices of Nuclear Regulatory Research (RES) and Nuclear Reactor Regulation (NRR). NRR was generally assigned the short-term operating experience reviews and RES long-term operating experience activities.

Since this time, both NRR and RES have recognized the need to make operating experience more efficiently available to users. RES has made substantial advances in making existing databases available through the internal web. These databases include licensee event reports (LERs), INPO's EPIX database, and monthly operating reports. RES uses these data to provide initiating event frequencies, safety system reliabilities, component failure probabilities, and common-cause failure parameter estimates, as well as related insights. The RES internal web page, for which significant further advances are already planned, will allow NRC staff easier and more timely access these estimates, related trends, and insights in a more timely manner. In addition, the RES internal web site will provide a new expanded LER search tool for use by NRC staff. It is planned that in April 2003, the accident sequence precursor (ASP) database will be accessible through the RES internal web site to the NRC staff. In September 2003, this will be followed by an expanded web site that will further integrate presently contained in separate databases and NUREG and NUREG/CR reports. NRR has similarly improved communications of its short term operating experience program outputs through web technology and is currently replatforming its events and assessment database.

However, despite individual program improvements, the effectiveness of the agency wide program has been questioned. Many believed that the current program activities should be more proactive, risk-informed, and integrated. Many also indicated that the insights gained and lessons learned from operating experience reviews should be better communicated to the users. In addition, both NRR and RES recognized that the governing agency policy, i.e., Management Directive 8.5, "Operational Safety Data Review," December 23, 1997, and various

guidance documents clearly needed updates. In late 2001, NRR created the Operating Experience Section (OES) under the Division of Regulatory Improvement Programs (DRIP). In late 2002, OES spearheaded an effort to assess the agency's overall operating experience program by soliciting support from various organizations responsible for agency's program activities. As a result, the Operating Experience Working Group has since been formed to better coordinate the multi-office effort for assessing and improving the agency's overall operating experience program.

One of the NRC follow-up actions to the Davis-Besse event was formation of a LLTF. The LLTF conducted an independent evaluation of the NRC's regulatory processes pertinent to the event in order to identify and recommend areas of improvement applicable to the NRC and the industry. A report summarizing their findings and recommendations was published on September 30, 2002. The report contains several consolidated lists of recommendations. The LLTF report was reviewed by a Review Team (RT), consisting of several senior management personnel appointed by the EDO. The RT issued a report on November 26, 2002, endorsing all but two of the LLTF recommendations, and placing them into four overarching groups. On January 3, 2003, the EDO issued a memo to the Directors of NRR and RES, tasking them with developing action plans for accomplishing High-Priority items in the four groups. This Action Plan addresses the assessment and improvement of the agency's operating experience program. It also addresses the recommendations of the Davis-Besse LLTF regarding operating experience program effectiveness. All of the seven High-Priority recommendations in "Assessment of Operating Experience, Integration of Operating Experience into Training, and Review of Program Effectiveness" grouping are included in this Action Plan.

Proposed Actions: This Action Plan describes the key high-level steps for the agency's operating experience overall program review, which goes beyond the scope of the Davis-Besse LLTF recommendations. This approach is expected to be more effective than addressing only the LLTF items separately from the overall operating experience program review. The High-Priority LLTF items are specifically designated in the milestones under appropriate Parts or steps to address the requirements prescribed in the January 3, 2003, Tasking Memorandum. The designated LLTF items represent only a subset of multiple activities for the corresponding milestone.

The milestones are grouped into Parts I, II, III, and IV.

Part I is associated with defining the objectives and attributes of the agency's desirable operating experience program and receiving the endorsement from the agency's executive management. An interoffice Task Force will be formed to perform the activities in Parts I and II. An interoffice (NRR, RES, and Regions) executive Steering Committee will also be formed to guide the Task Force activities. A Charter describing the goals and responsibilities of the Task Force will be jointly developed by the offices. The purpose of this Task Force is to complete the milestones described in the objective and assessment Phases (Parts I and II of this Action Plan) by December 31, 2003.

Part II describes the milestones associated with the assessment phase of the agency's overall operating experience program review. These assessment activities will be performed and completed by the Task Force. The scope of the assessment phases will include, but is not necessarily limited to, those operating experience functions identified by SECY-98-228. The output of the assessment activities will be the development of specific proposals for improvement in functional areas to effectively achieve the objectives established in Part I. The Task Force will issue a draft report for review when its preliminary observations, conclusions,

and proposals are identified. The Task Force will subsequently provide a final report to the Steering Committee documenting its specific program improvement proposals and the basis for those proposals. The Steering Committee will make recommendations to the offices on improvements to be made and office management will make appropriate assignments. The target date for the Part II milestones is December 31, 2003.

The Part III improvements would include a number of actions that could significantly improve the agency's overall operating experience program effectiveness. These actions will be taken by line organizations in accordance with an implementation plan in response to the recommendations by the Steering Committee. The implementation plan is expected to contain both short-term and long-term improvements. The short-term improvements are expected to be implemented starting in early 2004 and long-term improvements in mid- to late 2004. Actions are expected to require significant interoffice coordination and interaction. If the improvements requires significant changes to the policy, resource, or organizational structure, interactions with the Commission would be necessary. Meetings and communications with both internal and external stakeholders, e.g., INPO, are also expected and encompassed within the scope of the milestones listed in Parts II and III. The target date for completion all the Part III milestones is December 31, 2004.

Part IV lists the two inspection-related High-Priority LLTF items that are focused on enhancing inspection activities.

Originating Documents:

Memorandum from Travers, W.D. to Collins, S. and Thadani, A. C., dated January 3, 2003, "Actions Resulting From The Davis-Besse Lessons Learned Task Force Report Recommendations." (ML023640431)

Memorandum from Paperiello, C.J. to Travers, W.D., dated November 26, 2002, "Senior Management Review of the Lessons-Learned Report of the Davis-Besse Nuclear Power Station Reactor Pressure Vessel Head." (ML023260433)

Memorandum from Howell, A.T. to Kane, W.F., dated September 30, 2002, "Degradation of the Davis-Besse Nuclear Power Station Reactor Pressure Vessel Head Lessons-Learned Report." (ML022740211)

Regulatory Assessment: The agency performs a broad range of activities that relate to collection, assessment, feedback, and dissemination of nuclear reactor operating experience. The main purpose of these activities is to generate valuable insights and lessons learned from operating experience and provide feedback to the NRC regulatory programs and the industry. The output of these activities should positively influence both the NRC regulatory programs and the nuclear industry performance. These operating experience program activities provide mechanisms for an independent assessment of the effectiveness of the current NRC regulatory programs and activities and generate long-term, historical, and objective perspectives on individual nuclear power plant and industry performance.

The LLTF recommended that the effectiveness of the current operating experience program be evaluated. As stated earlier, a systematic review of the overall operating experience program has been ongoing and would proceed according to this Action Plan.

Again, the regulatory basis for the agency's current operating experience functions generally

stems from the roles and responsibilities defined in SECY-98-228. Any changes in the organizational and/or functional responsibilities defined in this SECY will likely require Commission consultation.

Current Status: All Part I (Objective Phase) activities are complete. The Operating Experience Task Force was formed, and completed development of program objectives and attributes, which were endorsed by the Steering Committee.

The Part II (Assessment Phase) activities are complete. The Task Force delivered its draft report to the Steering Committee in September. After incorporating review comments from the Steering Committee, the final report was delivered in November. The Steering Committee sent the report to line management in January with 24 direction setting recommendations for implementation.

The Part III (Implementation Phase) activities are complete. The plan for program development was completed in April 2004. Development of the Operating Experience framework (draft Management Directive/Handbook) was completed in December 2004. Implementation of the new processes by NRR and RES commenced as soon as the framework was approved. An NRR Office Instruction has been developed to implement the draft Management Directive and Handbook. Metrics for evaluating the effectiveness of the new process have been established and will be tracked in the NRR Operating Plan. After reviewing program enhancements instituted to date, it was determined that LLTF recommendations 3.1.6(3) and 3.3.4(2) were adequately addressed and can be considered complete.

Inspection program enhancements in Part IV were completed as scheduled. A web-based training process was initiated, by which inspectors log on and conduct self-paced training. A record of personnel who complete the training is available for management review and follow-up. Training modules on boric acid corrosion and primary water stress corrosion cracking were issued on the system. Also, a training program based on the Columbia shuttle accident, which emphasizes expectations on maintaining a questioning attitude, awareness of surroundings, follow-up to problems, etc., was presented at inspector counterpart meetings and added to the web-based training.

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References:

Management Directive 8.5, "Operational Safety Data Review," December 23, 1997.

SECY-98-228, "Proposed Streamlining and Consolidation of AEOD Functions and Responsibilities," October 1, 1998.

Table 1
LLTF Report Recommendations (High Priority)

RECOMMENDATION NUMBER	RECOMMENDATION
3.1.6(1)	The NRC should take the following steps to address the effectiveness of its programs involving the review of operating experience: (1) evaluate the agency's capability to retain operating experience information and to perform longer-term operating experience reviews; (2) evaluate thresholds, criteria, and guidance for initiating generic communications; (3) evaluate opportunities for additional effectiveness and efficiency gains stemming from changes in organizational alignments (e.g., a centralized NRC operational experience "clearing house"); (4) evaluate the effectiveness of the Generic Issues Program; and (5) evaluate the effectiveness of the internal dissemination of operating experience to end users.
3.1.6(2)	The NRC should update its operating experience guidance documents.
3.1.6(3)	The NRC should enhance the effectiveness of its processes for the collection, review, assessment, storage, retrieval, and dissemination of foreign operating experience.
3.2.4(1)	The NRC should assess the scope and adequacy of its requirements governing licensee review of operating experience.
3.3.4(2)	The NRC should strengthen its inspection guidance pertaining to the periodic review of operating experience. The level of effort should be changed, as appropriate, to be commensurate with the revised guidance.
3.3.1(1)	The NRC should provide training and reinforce expectations to NRC managers and staff members to address the following areas: (1) maintaining a questioning attitude in the conduct of inspection activities; (2) developing inspection insights stemming from the DBNPS event relative to symptoms and indications of RCS leakage; (3) communicating expectations regarding the inspection follow-up of the types of problems that occurred at DBNPS; and (4) maintaining an awareness of surroundings while conducting inspections. Training requirements should be evaluated to include the appropriate mix of formal training and on-the-job training commensurate with experience. Mechanisms should be established to perpetuate these training requirements.

3.3.5(1)

The NRC should maintain its expertise in the subject areas by ensuring that NRC inspector training includes: (1) boric acid corrosion effects and control; and (2) PWSCC of nickel based alloy nozzles.