TO ALL REACTOR LICENSEES AND APPLICANTS

August 5-1985

Gentlemen:

SUBJECT: TRANSMITTAL OF NUREG-1154 REGARDING TO THE DAVIS-BESSE LOSS OF MAIN AND AUXILIARY FEEDWATER EVENT (Generic Letter No. 85 - 13)

On June 9, 1985, Toledo Edison Company's Davis-Besse Nuclear Power Plant experienced a loss of all feedwater event while the plant was operating at 90% power. Shortly after the event, the NRC Executive Director for Operations directed that an NRC Team be sent to Davis-Besse, in conformance with the staff-proposed Incident Investigation Program, to investigate the circumstances of this event.

The NRC Team has now completed its investigation and has documented the factual information and their findings and conclusions associated with the event (see enclosed NUREG-1154, entitled "Loss of Main and Auxiliary Feedwater Event at the Davis-esse Plant on June 9, 1985"). You should review the information for applicability to your facility.

In addition, you should ensure that the information in NUREG-1154 is made available to your plant staff as part of your training program in connection with the Feedback of Operating Experience to Plant Staff (TMI Action Plan Item I.C.5.).

This generic letter is provided for information only, and does not involve any reporting requirements. Therefore, no clearance from the Office of Management and Budget is required.

Hugh L. Thompson, Jr., Director
Division of Licensing

Enclosure:
NUREG-1154

SL:ORAB:DL	C:ORAB:DL	AD:DL	D/DL
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On August 5, 1985, the Executive Director for Operations (EDO) identified and assigned responsibility for generic and plant-specific actions resulting from the investigation of the Davis-Besse event. Some of the generic actions may be applicable to your facility. A copy of the EDO memorandum is included for your information.

This generic letter is provided for information only, and does not involve any reporting requirements. Therefore, no clearance from the Office of Management and Budget is required. The enclosed report is currently under NRC review. Any generic requirements stemming from the report will be transmitted at a later date following completion of the appropriate procedural steps.

Original Signed By:

Hugh L. Thompson, Jr., Director
Division of Licensing

Enclosures:
1. NUREG-1154
2. EDO Memorandum of August 5, 1985
3. List of Generic Letters

*PREVIOUS CONCURRENCE SEE DATE

SL:ORAB:DL*	C:ORAB:DL*	AD/SA:DL*	D/DL
JHannon:cl	GHolahan	DCrutchfield	HThompson
7/24/85	7/24/85	7/25/85	8/5/85

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

AUG 0 5 1985

MEMORANDUM FOR: Harold R. Denton, Director, NRR
James M. Taylor, Director, IE
Robert B. Minogue, Director, RES
C. J. Heltemes, Jr., Director, AEOD
James G. Keppler, Regional Administrator, RIII

FROM: William J. Dircks
Executive Director for Operations

SUBJECT: STAFF ACTIONS RESULTING FROM THE INVESTIGATION OF THE JUNE 9 DAVIS-BESSE EVENT (NUREG-1154)

An advance copy of the subject report was transmitted to you by memorandum dated July 22, 1985 from the Davis-Besse Team Leader, C. E. Rossi. The report documents the Team's efforts in identifying the circumstances and causes of the June 9, 1985 event, together with findings and conclusions which form the basis for identifying follow-on actions.

You will note from the report that the licensee has not completed troubleshooting and the determination of root causes for all equipment failures or malfunctions. Consequently, the results of future troubleshooting or analysis activities may form the basis for additional follow-on actions. The identification of these additional actions is a responsibility of the normal program office. The responsibility for the followup and reporting on the licensee's continued troubleshooting and determination of root cause for equipment failures is Region III.

The purpose of this memorandum is to identify and assign responsibility for generic and plant-specific actions resulting from the investigation of the Davis-Besse event (documented in NUREG-1154). In this regard, you are requested to review the enclosure which specifies staff actions resulting from the investigation of the June 9 Davis-Besse event. You are requested to determine the actions necessary to resolve each of the items in your area of responsibility and, where appropriate, identify additional staff actions or revisions as our review and understanding of this event are refined. Plant-specific actions required for plant restart should receive priority attention.

Although the NRC Team that investigated the Davis-Besse event did not identify major NRC deficiencies, nonetheless this event provides an opportunity to learn from experience and to feed back the pertinent lessons into our activities. Consequently, all responsible program managers should conduct an in-depth and searching reappraisal of the effectiveness of their programs and the lessons of the Davis-Besse event. In sum, how can we make our programs more effective

and the NRC a better regulatory agency? For example, what actions are needed when a utility continues to receive low SALP ratings; what impediments or procedures are delaying decisions regarding needed plant upgrades; how can effective corrective action be achieved when plants have a history of maintenance deficiencies; and what should be done when voluntary licensee improvement programs prove less than satisfactory? We need to reflect on these and similar questions and identify further, perhaps more focused actions to gain needed improvements.

In view of the importance of this subject, I intend to have periodic progress review meetings. The first meeting will be in September, and at that time you should be prepared to: (1) discuss the schedule and status of each item within your responsibility listed in the enclosure or that you have identified; and (2) provide a written summary of those actions you have identified for achieving improvements in your program areas. Further, I request that you prepare a written status report on the disposition of your items (and anticipated actions for uncompleted items) within six months. Every effort should be made to dispose of these items promptly.

The enclosure is based directly on the NRC Team's report. Accordingly, it does not include all licensee actions, nor does it cover NRC staff activities associated with normal event followup such as authorization for restart, plant inspections, or possible enforcement items. These items are expected to be defined and implemented in a routine manner. Overall lead responsibility for staff actions relating to facility restart is separate from this effort and rests with NRR. Additionally, NRR is responsible for coordinating and promptly communicating the staff's requirements which must be resolved before operations at Davis-Besse may be resumed. Other offices involved in plant-specific actions are to coordinate their efforts with NRR.

Separately from this action, I will be discussing with you further how we may improve the IIT procedures based upon the experience with the Davis-Besse Team.

William J. Dircks
Executive Director for Operations

Enclosure:
As Stated

cc w/enclosure:
J. Davis, NMSS
T. Murley, RI
J. N. Grace, RII
R. Martin, RIV
J. Martin, RV

STAFF ACTIONS RESULTING FROM THE INVESTIGATION

OF THE JUNE 9 DAVIS-BESSE EVENT

(Reference: NUREG-1154)

1. Item 1: Adequacy of the licensee's management and maintenance practices. (Reference: Conclusion Section 8)

Action	Responsible Office	Category
(a) Evaluate and take action on the licensee's response to findings relating to corrective actions and preventive maintenance problems (including testing, root cause determination of equipment misoperation and operating experience).	NRR	Plant-specific
(b) Evaluate and take action on the licensee's response to findings concerning management practices (e.g., control of maintenance programs and post-trip reviews).	Region III	Plant-specific

2. Item: Completion of analyses for loss of feedwater events. (Reference: Section 7)

Action	Responsible Office	Category
Evaluate the time margins and consequences of alternative sequences for a loss of feedwater event at Davis-Besse.	NRR	Plant-specific

3. Item: Adequacy of the Steam Feedwater Rupture Control System (SFRCS). (References: Section 5.2.2 and Finding 6)

Action	Responsible Office	Category
Review the design basis for SFRCS and the susceptibility of the SFRCS to: a) spurious actuations involving such items as MSIV closure; and b) single failures.	NRR	Plant-specific

4. Item: Interaction of plant security features and operator actions. (References: Section 3.6 and Finding 9)

Action	Responsible Office	Category
Evaluate the effect of security features (locked doors, locked equipment, etc.) on the operator's ability to gain prompt access to equipment required to perform safety actions outside the control room in accordance with emergency procedures.	NRR	Plant-specific Generic

5. Item: Availability of the Shift Technical Advisor (STA) (References: Section 6.1.3 and Finding 14)

Action	Responsible Office	Category
Evaluate the time available and role for STA assistance during complex operating events.	NRR	Plant-specific Generic

6. Item: Reliability of the AFW containment isolation valves and other safety-related valves. (References: Section 5.2.5 and Findings 4, 5, 6, and 15)

Action	Responsible Office	Category
(a) Monitor the licensee's troubleshooting activities.	Region III	Plant-specific
(b) Evaluate the licensee's engineering report on root cause analysis and proposed corrective actions.	NRR	Plant-specific
(c) Determine if the safety function of the AFW containment isolation valves has been properly specified, i.e., are the valves required to open as well as close for design basis events.	NRR	Plant-specific
(d) Verify that these valves constitute a single failure point for the AFW system for certain design basis events.	NRR	Plant-specific

Action	Responsible Office	Category
(e) Determine that the procedures for adjustments of the AFW isolation valves such as torque switch bypass switches are clear and proper, and that the associated training programs are adequate. Confirm that adjustment settings are consistent with plant procedures.	Region III	Plant-specific
(f) Determine if the engineering basis for the specification of the adjustments for safety-related valves such as the torque switch and torque switch bypass switch settings are adequate for all design basis events.	NRR	Plant-specific
(g) Evaluate the test program for the AFW containment isolation valves to confirm operability for all design basis events.	NRR	Plant-specific
(h) Evaluate whether other safety-related valves in Davis-Besse may be subject to the same type/cause of failure.	NRR	Plant-specific
(i) Conduct a review of failures of safety-related motor-operated valves and provide an assessment of pertinent failure modes affecting valve performance under design basis conditions.	AEOD	Generic
(j) Determine if further generic correspondence, such as an NRC Bulletin, is warranted on this type/cause of failure of safety-related valves.	IE	Generic

7. Item: Adequacy of emergency notifications. (References: Section 6.1.4 and Finding 12)

Action	Responsible Office	Category
(a) Verify the adequacy of the licensee's procedures and training for reporting of events to the NRC Operations Center.	Region III	Plant-specific

(b) Review the adequacy of NRC guidance for determination of severity levels when plant conditions vary and may be stable when the licensee has an opportunity to report.	IE	Generic
(c) Review the adequacy of shift staffing for assuring that knowledgeable individuals will be available for properly implementing the emergency plan during complex and long operational events.	IE	Generic

8. Item: Reliability of the AFW pump turbines.
(References: Sections 5.2.4 and 6.2.4 and Findings 4, 8, and 15)

Action	Responsible Office	Category
(a) Monitor the licensee's troubleshooting activities including possible hot plant operation to confirm failure mode.	Region III	Plant-specific
(b) Evaluate the licensee's engineering report on root cause analysis and proposed corrective actions.	NRR	Plant-specific
(c) Evaluate the licensee's response and corrective actions relating to the unreliability of the auxiliary feedwater system (including the need for a third pump and turbine trip reset capability).	NRR	Plant-specific
(d) Verify that the AFW system has been adequately tested to confirm system configuration involved with design basis events.	Region III	Plant-specific
(e) Review the implementation of the operator training program to assure proper operator actions, such as resetting of trip throttle valve.	Region III	Plant-specific
(f) Conduct a review of past operating experience and determine the causes for overspeed turbine trips.	AEOD	Generic

(g) Determine the need for further generic correspondence on this failure mode/cause.	IE	Generic

9. Item: Reliability of the PORV.
(References: Sections 5.2.8 and 6.2.1 and Findings 10 and 13)

Action	Responsible Office	Category
(a) Monitor the licensee's troubleshooting activities.	Region III	Plant-specific
(b) Evaluate the licensee's engineering report on root cause analysis and proposed corrective actions.	NRR	Plant-specific
(c) Determine the need for a test program to establish reliability.	NRR	Generic
(d) Determine if surveillance tests are necessary to confirm operational readiness.	NRR	Generic
(e) Determine if additional protection against PORV failure is necessary, i.e., automatic block valve closure.	NRR	Generic

10. Item: Adequacy of control room instrumentation and controls.
(References: Sections 6.1.1, 6.1.2, and 6.2.2 and Findings 10, 11, 17, and 18)

Action	Responsible Office	Category
(a) Evaluate the adequacy of the SFRCS actuation controls and associated training program.	NRR	Plant-specific
(b) Evaluate the adequacy of the installed control room instrumentation to allow operators to make the necessary and prompt determination for procedure conformance and PORV position.	NRR	Plant-specific

Action	Responsible Office	Category
(c) Determine if NRC requirements should be revised regarding: (1) SPDS availability; and (2) the need for plant-specific simulator.	NRR	Plant-specific Generic

11. Item: Need for isolation of the startup feedwater pump. (References: Section 5.1.3 and Finding 7)

Action	Responsible Office	Category
Reassess acceptability of the provisions which resulted in the inability to place the startup feedwater pump in service from the control room.	NRR	Plant-specific

12. Item: Resolution of equipment deficiencies. (References: Section 5 and Table 5.1)

Action	Responsible Office	Category
(a) Monitor the licensee's troubleshooting activities.	Region III	Plant-specific
(b) Evaluate the licensee's engineering report on the root cause analysis and corrective action for the equipment listed on Table 5.1 and not addressed by other items in this action plan.	NRR	Plant-specific
(c) Determine the need for generic correspondence on equipment problems.	IE	Generic

13. Item: Adequacy of plant procedures. (References: Sections 6.1.1 and 6.1.2 and Findings 10 and 17)

Action	Responsible Office	Category
Verify that plant procedures involving "drastic" actions are required to be sufficiently precise and clear to ensure prompt implementation.	NRR	Generic

14. Item: Adequacy of safety system testing.
(Reference: Finding 15)

Action	Responsible Office	Category
Evaluate the NRC requirements and guidance to assure that safety systems are tested in all configurations required by the design basis analysis.	NRR	Generic

15. Item: Acceptability of current safety assessment methods.
(References: Findings 1 and 2)

Action	Responsible Office	Category
Assess the implications of multiple independent and common mode failures as they relate to departures from design assumptions and specifications used in probabilistic safety analyses.	RES	Generic

LIST OF RECENTLY ISSUED GENERIC LETTERS

GENERIC LETTER NO.	SUBJECT	DATE
85-01	Fire Protection Policy Steering Committee Report	1/9/85
85-02	Staff Recommended Actions Stemming From NRC Integrated Program for the Resolution of Unresolved Safety Issues Regarding Steam Generator Tube Integrity	4/15/85
85-03	Clarification of Equivalent Control Capacity For Standby Liquid Control Systems	1/28/85
85-04	Operator Licensing Examinations	1/29/85
85-05	Inadvertent Boron Dilution Events	1/31/85
85-06	Quality Assurance Guidance for ATWS Equipment that is not Safety-Related	4/16/85
85-07	Implementation of Integrated Schedules for Plant Modifications	5/02/85
85-08	10 CFR 20.408 Termination Reports - Format	5/23/85
85-09	Technical Specifications for Generic Letter 83-28, Item 4.3	5/23/85
85-10	Technical Specifications for Generic Letter 83-28, Items 4.3 and 4.4	5/23/85
85-11	Completion of Phase II of "Control of Heavy Loads at Nuclear Power Plants" NUREG-0612	6/28/85
85-12	Implementation of TMI Action Item II.K.3.5, "Automatic Trip of Reactor Coolant Pumps"	6/28/85
85-13	Transmittal of NUREG-1154 Regarding the Davis Besse Loss of Main and Auxiliary Feedwater Event	8/5/85