OMB No.: 3150-0011
NRCB 85-03, Supplement 1

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

April 27, 1988

NRC BULLETIN NO. 85-03, SUPPLEMENT 1: MOTOR-OPERATED VALVE COMMON MODE FAILURES DURING PLANT TRANSIENTS DUE TO IMPROPER SWITCH SETTINGS

Addressees:

All holders of operating licenses or construction permits for boiling water reactors (BWRs).

Purpose:

The purpose of this supplement to NRC Bulletin 85-03 (B 85-03), "Motor-Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Settings," is to clarify (1) which valves are to be included and (2) the meaning of the phrase ". . . inadvertent equipment operations (such as inadvertent valve closures or openings) . . ." as used in the bulletin.

Background:

B 85-03, which was issued on November 15, 1985, was prompted by the June 9, 1985 event at the Davis-Besse plant in which the inability to reopen two valves that had inadvertently been closed led to a loss of both trains of the auxiliary feedwater system.

Discussion:

Review of the responses to B 85-03 from BWR facilities, including those from the owners group, has indicated that there is a misunderstanding in regard to the related issues of (1) which valves are to be included and (2) the meaning of the phrase ". . . inadvertent equipment operations (such as inadvertent valve closures or openings) . . ." as used in the bulletin.

The first misunderstanding pertains to which valves are addressed by the bulletin. As written, the action portion of B 85-03 applies to motor-operated valves in selected systems that ". . . are required to be tested for operational readiness in accordance with 10 CFR 50.55a(g) . . ." At the time the bulletin was issued, the staff believed that the inservice testing programs required by 10 CFR 50.55a(g) were applicable to most, if not all, of the safety-related valves in the selected systems. However, recent conversations with the owners group and several licensees have indicated that a number of valves in these systems are normally kept in their safety positions and are not covered by the

inservice testing program. However, if the proper precautions are not taken, these valves which are normally properly positioned could be mispositioned, either before or during the initial phases of an event. This would render the safety system inoperable unless the valves could be repositioned to the proper position. Therefore, the heading of the action section of B 85-03 has been revised to include all safety-related valves in the selected systems.

The meaning of the phrase ". . . inadvertent equipment operation (such as inadvertent valve closures or openings) . . ." used in action item a of the bulletin can also be misunderstood. This phrase stems from the desire to address the salient feature of the Davis-Besse event -- namely, the inability to reposition either of two redundant valves that had been mispositioned earlier in the event. Although it was not the intent of the bulletin to expand the design-basis events for plants, it was intended to ensure the high reliability of individual safety systems. To this end, and given the chain of events associated with the Davis-Besse event, the staff felt that the only way to ensure this high reliability was to verify the ability of all valves to recover from mispositioning. Therefore, action item a of B 85-03 has been revised to clearly indicate that each motor-operated valve must be able to recover from an inadvertent mispositioning.

This revision to B 85-03 may expand the number of valves addressed by some licensees. In addition, some of these licensees may have already completed their scheduled activities to comply with the bulletin. Therefore, the time limits for completing all the activities (action item e) have been modified to allow additional time for those licensees who have already completed their planned activities.

Actions for All BWR Holders of Operating Licenses or Construction Permits:

For safety-related motor-operated valves in the high pressure coolant injection/core spray and reactor core isolation cooling systems not included in the actions planned or completed in response to the original bulletin, develop and implement a program to ensure that valve operator switches are selected, set, and maintained properly. This should include the following:

a. Review and document the design basis for the operation of each valve. This documentation should include the maximum differential pressure expected during both opening and closing of the valve for both normal and abnormal events to the extent that the events are included in the existing, approved design basis (i.e., the design basis documented in pertinent licensee submittals such as FSAR analyses and fully approved operating and emergency procedures, etc.). In addition, when determining the maximum differential pressure for valves that can be inadvertently mispositioned,[1] the fact that the valve must be able to recover from such mispositioning should be included.

[1]Any motor-operated valve that is not blocked from inadvertent operation from either the control room, the motor control center, or the valve itself should be considered capable of being mispositioned.

b. Perform action item b of the original bulletin for any additional valves identified above.

The intent is to provide assurance that a program exists for selecting and setting valve operator switches to ensure a high reliability of safety system valves. If changing the switch settings is not sufficient to ensure the capability for repositioning a particular mispositioned valve, a justification for continued operation should be provided in the bulletin response if the licensee does not elect to implement additional actions, such as administrative or procedural controls or equipment modifications, to minimize the likelihood of valve malfunction.

c. Perform action item c of the original bulletin for any additional valves identified above.

d. Perform action item d of the original bulletin for any additional valves identified above.

e. Within 30 days of receipt of this supplement, submit a written report to the NRC that, for any additional valves: (1) provides the revised results of item a, above and (2) contains a schedule for completion of items b through d, above.

1. No changes from the schedule for complying with the original bulletin are anticipated for plants with an OL that, as of the date of this supplement, had not yet begun the refueling outage during which the activities in the original bulletin were scheduled to be accomplished.

2. Plants with an OL that, as of the date of this supplement, have completed their planned activities in response to the original bulletin have until the completion of their next refueling outage to complete any additional activities resulting from this supplement. The final report covering the activities already completed in response to the original bulletin shall be submitted in accordance with the original schedule.

3. No changes from the schedule for complying with the original bulletin are anticipated for plants with a CP.

f. Revise the report requested by the original bulletin to include any additional valves. This revised report shall be submitted to the NRC within 60 days of completion of the program for the additional valves.

Additional Related Generic Communications:

B 85-03 identified a number of related generic communications. Since its issuance on November 15, 1985, the following additional related information notices have been issued:

a. Information Notice No. 86-29, "Effects of Changing Valve Motor-Operator Switch Settings," was issued on April 25, 1986.

b. Information Notice No. 86-93, "IEB 85-03 Evaluation of Motor-Operators Identifies Improper Torque Switch Settings," was issued on November 3, 1986.

c. Information Notice No. 87-01, "RHR Valve Misalignment Causes Degradation of ECCS in PWRS," was issued on January 6, 1987.

The written reports requested above shall be addressed to the U. S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555, under oath or affirmation under the provisions of Section 182a, Atomic Energy Act of 1954, as amended. In addition, a copy shall be submitted to the appropriate Regional Administrator.

This request for information was approved by the Office of Management and Budget under clearance number 3150-0011. Comments on burden and duplication should be directed to the Office of Management and Budget, Reports Management, Room 3208, New Executive Office Building, Washington, D.C. 20503.

Although no specific request or requirement is intended, the time required to complete each action item above would be helpful to the NRC in evaluating the cost of this bulletin.

If you have any questions about this matter, please contact the technical contact listed below or the appropriate NRR project manager.

Charles E. Rossi

Charles E. Rossi, Director
Division of Operational Events Assessment
Office of Nuclear Reactor Regulation

Technical Contact: Richard J. Kiessel, NRR
(301) 492-1154

Attachment: List of Recently Issued NRC Bulletins

Attachment
NRCB 85-03, Supplement 1
April 27, 1988

LIST OF RECENTLY ISSUED NRC BULLETINS

Bulletin No.	Subject	Date of Issuance	Issued to
87-02, Supplement 1	Fastener Testing to Determine Conformance with Applicable Material Specifications	4/22/88	All holders of OLs or CPs for nuclear power reactors.
88-03	Inadequate Latch Engagement in HFA Type Latching Relays Manufactured by General Electric (GE) Company	3/10/88	All holders of OLs or CPs for nuclear power reactors.
88-02	Rapidly Propagating Fatigue Cracks in Steam Generator Tubes	2/5/88	All holders of OLs or CPs for W-designed nuclear power reactors with steam generators having carbon steel support plates.
88-01	Defects in Westinghouse Circuit Breakers	2/5/88	All holders of OLs or CPs for nuclear power reactors.
87-02	Fastener Testing to Determine Conformance with Applicable Material Specifications	11/6/87	All holders of OLs or CPs for nuclear power reactors.
87-01	Thinning of Pipe Walls in Nuclear Power Plants	7/9/87	All licensees for nuclear power plants holding an OL or CP.
86-04	Defective Teletherapy Timer That May Not Terminate Dose	10/29/86	All NRC licensees authorized to use cobalt-60 teletherapy units.
86-03	Potential Failure of Multiple ECCS Pumps Due to Single Failure of Air-Operated Valve in Minimum Flow Recirculation Line	10/8/86	All facilities holding an OL or CP.

OL = Operating License
CP = Construction Permit

b. Information Notice No. 86-93, "IEB 85-03 Evaluation of Motor-Operators Identifies Improper Torque Switch Settings," was issued on November 3, 1986.

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Reviewed by CRGR in meeting #133, 4/13/88. In a telephone conversation with D. Hetteles on 4/20/88, agreement was reached on modifications to memo to CRGR. Comments. The bulletin was modified accordingly. CE Rossi 4/21/88

*SEE PREVIOUS CONCURRENCES

*OGCB:DOEA:NRR	*PPMB:ARM	*C/OGCB:DOEA:NRR	*D/DOEA:NRR
RJKiessel	TechEd	CHBerlinger	CERossi
03/07/88	03/07/88	03/09/88	~~03/14/88~~ 4/21/88

The written reports requested by items e and f should be submitted to the appropriate Regional Administrator, signed under oath or affirmation under the provisions of Section 182a of the Atomic Energy Act of 1954, as amended. In addition, the original of the cover letters and a copy of the reports shall be transmitted to the U.S. Nuclear Regulatory Commission, Document Control Desk, Washington, D.C. 20555 for reproduction and distribution.

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03/7 /88	03/7 /88	03/ /88	03/ /88