



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

October 7, 1992

TO: ALL LIGHT-WATER REACTOR LICENSEES AND APPLICANTS

SUBJECT: SUPPLEMENT 1 TO GENERIC LETTER 83-28, "REQUIRED ACTIONS BASED ON
GENERIC IMPLICATIONS OF SALEM ATWS EVENTS"

PURPOSE

The U.S. Nuclear Regulatory Commission (NRC) is issuing this generic letter supplement to inform licensees that the actions of items 4.2.3 (life testing) and 4.2.4 (periodic replacement of breakers or components) as originally described in the enclosure to Generic Letter (GL) 83-28, "Required Actions Based on Generic Implications of Salem ATWS Events" are no longer needed.

BACKGROUND

On February 22 and 25, 1983, the Salem Nuclear Generating Station experienced anticipated transient without scram (ATWS) events. These events prompted the NRC to issue IE Bulletin 83-01, "Failure of Reactor Trip Breakers (Westinghouse DB-50) to Open on Automatic Trip Signal," to address the short-term corrective actions. The NRC also formed a task force to assess the generic implications of these events. Upon reviewing the findings of the task force, the NRC issued GL 83-28.

In GL 83-28, the staff requested the licensees to implement long-term corrective actions in response to the Salem events. GL 83-28 included two major actions to improve the reliability of the reactor trip system: (1) install a plant modification that provided for the automatic actuation of the shunt trip attachment of the reactor trip breaker (RTB) following any automatic reactor trip signal, and (2) establish a comprehensive program of preventive maintenance and surveillance testing to ensure reliable RTB operation. In addition, items 4.2.3 and 4.2.4 of GL 83-28 requested licensees to perform life testing of RTBs and periodically to replace the breakers or components in accordance with their demonstrated life.

THE STAFF'S REVISED POSITION ON THE LIFE TESTING OF BREAKERS

The modifications to automatically actuate the shunt trip attachments of RTBs following any automatic reactor trip signal and the program of preventive maintenance and surveillance testing requested by GL 83-28 have been implemented by licensees. However, the life testing and program for periodic replacement of breakers or components requested by items 4.2.3 and 4.2.4 of GL 83-28 have not been fully implemented. In response to these items, many

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licensees have referenced WCAP-10852¹ for DB-50 RTBs, WCAP-10835² for DS-416 RTBs, and a joint Combustion Engineering and Babcock and Wilcox trending program for General Electric (GE) AK-2 RTBs. The staff has not found these responses to be acceptable primarily because no life testing was conducted for the GE RTBs and only limited testing was conducted for the Westinghouse RTBs. The licensees contend that further life testing of the RTBs is not necessary because of their extensive quality assurance, preventive maintenance, and surveillance testing programs. In the process of determining if additional guidance on items 4.2.3 and 4.2.4 was needed, the staff reviewed operating experience for the period 1986 through early 1991 based upon information in the Nuclear Plant Reliability Data System and in Licensee Event Reports. The review revealed that the vast majority of reported failures have been failures to close, rather than failures to open, or degraded conditions detected during planned maintenance, testing, and inspection. Three cases of slow opening were identified, as well as several cases where either the shunt trip or the undervoltage trip attachment, but not both, failed to perform satisfactorily. However, the review identified only one failure of a RTB to open, in which both the undervoltage and the shunt trip attachments failed to cause the breaker to open. Since the staff conducted this review in December 1991, there has been an additional instance in which a RTB failed to fully open on demand during a routine surveillance test. In light of this RTB operating experience, the staff has concluded that the actions already completed pursuant to GL 83-28 have been effective in improving RTB reliability to open and that further actions to address the end-of-life degradation in breaker reliability are not justified. Furthermore, since issuing GL 83-28, the NRC has promulgated the requirements for reducing the risk from ATWS events in 10 CFR 50.62. The modifications associated with this regulation further reduce the risk resulting from the failure of RTBs. Therefore, the staff concludes that licensee actions in response to items 4.2.3 and 4.2.4 of GL 83-28 are not necessary.

To the extent that licensees may have made commitments to programs for periodically replacing RTBs or components in responses to GL 83-28, they may review and modify these programs taking into account their plant-specific operating experience, maintenance programs, and root cause determination programs for RTBs.

¹WCAP-10852, "Report of the DB-50 Reactor Trip Breaker, Shunt and Undervoltage Trip Attachments, Life Cycle Tests," James P. Chizmar, et al, May 1985

²WCAP-10835, "Report of the DS-416 Reactor Trip Breaker Undervoltage and Shunt Trip Attachments, Life Cycle Tests," James P. Chizmar, et al, May 1985

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BACKFIT DISCUSSION

In issuing this generic letter supplement, the staff is relaxing the original positions taken in items 4.2.3 and 4.2.4 of GL 83-28, and hence this generic letter supplement is not considered a backfit. The staff prepared an evaluation of the positions in this generic letter supplement in accordance with the charter of the Committee to Review Generic Requirements (CRGR) and concluded that the public health and safety and common defense and security will be adequately protected, and the proposed changes will not affect the public health and safety. This evaluation is available in the public document room with the minutes of the 220th meeting of the CRGR.

This generic letter supplement does not seek to collect any information, and hence, the Paperwork Reduction Act does not apply.

No response is required to this letter. If you have any questions regarding this matter, please contact the technical contact or the lead project manager listed below.

Sincerely,



James G. Partlow
Associate Director for Projects
Office of Nuclear Reactor Regulation

Enclosure:
List of Recently Issued Generic Letters

Technical Contact: Peter C. Wen, NRR
(301) 504-2832

Lead Project Manager: Leonard N. Olshan, NRR
(301) 504-3018

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| <u>92-04</u> | RESOLUTION OF THE ISSUES RELATED TO REACTOR VESSEL WATER LEVEL INSTRUMENTATION IN BWRs PURSUANT TO 10CFR50.54(F) | 08/19/92 | ALL BWR LICENSEES FOR OPERATING REACTORS |
| <u>90-02 SUPPLEMENT 1</u> | ALTERNATIVE REQUIREMENTS FOR FUEL ASSEMBLIES IN THE DESIGN FEATURES SECTION OF TECHNICAL SPECIFICATIONS | 07/31/92 | ALL LWR LICENSEES AND APPLICANTS |
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| <u>92-02</u> | RESOLUTION OF GENERIC ISSUE 79, UNANALYZED REACTOR VESSEL (PWR) THERMAL STRESS DURING NATURAL CONVECTION COOLDOWN | 03/06/92 | ALL HOLDERS OF OP LICENSES OF CONST. PERMITS FOR PWRs |

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No response is required to this letter. If you have any questions regarding this matter, please contact the technical contact or the lead project manager listed below.

Sincerely,

ORIGINAL SIGNED:

James G. Partlow
Associate Director for Projects
Office of Nuclear Reactor Regulation

Enclosure:
List of Recently Issued Generic Letters

Technical Contact: Peter C. Wen, NRR
(301) 504-2832

Lead Project Manager: Leonard N. Olshan, NRR
(301) 504-3018

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