

BOSTON EDISON COMPANY  
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WILLIAM D. HARRINGTON  
SENIOR VICE PRESIDENT  
NUCLEAR

BECO. #84-074

June 4, 1984

Mr. Domenic B. Vassallo, Chief  
Operating Reactors Branch #2  
Division of Licensing  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D. C. 20555

License No. DPR-35  
Docket No. 50-293

Reference: Generic Letter 84-11: Inspections of  
BWR Stainless Steel Piping

Dear Sir:

Background

Generic Letter 84-11 directed licensees to respond to suggested actions for the reinspection of piping susceptible to intergranular stress corrosion cracking (IGSCC) in large-diameter recirculation and residual heat removal piping.

Action Item 1

A reinspection program of piping susceptible to IGSCC should be undertaken. The reinspection should commence within about two calendar years, adjusted to coincide with the next scheduled outage, from the previous inspection performed under IE Bulletin 82-03, 83-02, or our August 26, 1983 Order.

Response

Boston Edison is currently performing an inspection pursuant to IE Bulletins 82-03, Revision 1 and IE Bulletin 83-02 during Refueling Outage 6 (RFO 6). We are also replacing a major portion of the IGSCC susceptible Type 304 stainless steel piping with Type 316 "nuclear grade" stainless, a type which has been demonstrated to be highly resistant to IGSCC. The inspection and replacement is being conducted in accordance with the above referenced Bulletins and a Confirmatory Order dated August 26, 1983.

If appropriate, an augmented inspection program of piping susceptible to IGSCC will be developed and submitted to the NRC for review prior to RFO 7.

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Action Item 2

These reinspections should include the following stainless steel welds, susceptible to IGSCC, in piping equal to or greater than 4" in diameter, in systems operating over 200°F, that are part of or connected to the reactor coolant pressure boundary, out to the second isolation valve as follows.

- (a) Inspection of 20% of the welds in each pipe size of IGSCC sensitive welds not inspected previously (but no less than 4 welds) and reinspection of 20% of the welds in each pipe size inspected previously (but not less than 2 welds) and found not to be cracked. This sample should be selected primarily from weld locations shown by experience to have the highest propensity for cracking.
- (b) All unrepaired cracked welds.
- (c) Inspection of all weld overlays on welds where circumferential cracks longer than 10% of circumference were measured. Disposition of any findings will be reviewed on a case-by-case basis. Criteria for operation beyond one cycle with overlaid joints are under development.
- (d) Inspection of any weld treated by induction heating stress improvement which has not been post treatment UT acceptance tested.
- (e) In the event new cracks or significant growth of old cracks are found, the inspection scope should be expanded in accordance with IEB 83-02.

Response

As stated above, pipe inspection and replacement associated with IGSCC is currently in progress. The welds subject to augmented inspection may change because of replacement or repair based on the results of the ongoing effort.

Boston Edison shall provide the appropriate list prior to beginning the augmented inspections during RFO 7.

Action Item 3

All level 2 and level 3 UT examiners should demonstrate competence in accordance with IEB 83-02 and level 1 examiners should demonstrate field performance capability.

Response

Boston Edison Company plans to continue the current practice of requiring that all Level II and Level III UT examiners demonstrate their ability to detect IGSCC in accordance with the IE Bulletin 83-02. In addition, all Level I UT examiners are and will be required to demonstrate field performance capability. To date, the inspection agency hired by BECo to perform IGSCC inspections has provided sufficient qualified examiners to perform the required examinations.

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Action Item 4

Leak detection and leakage limits should be sufficiently restrictive to ensure timely investigation of unidentified leakage. See attachment 1.

Response

The August 26, 1983 Confirmatory Order mandated interim leakage limits and operability requirements for the primary containment leak detection systems. These requirements reflect Attachment I to Generic Letter 84-11.

Boston Edison shall use the Order's interim measures as guidelines in the preparation of a technical specification amendment which shall be submitted in the near future.

Action Item 5

Respond to the crack evaluation and repair criteria in Attachment 2 of GL84-11.

Response

At present Boston Edison plans to use the crack evaluation and repair criteria contained in Attachment 2 of Generic Letter 84-11.

The Electric Power Research Institute (EPRI) and the Boiling Water Reactors Owners Group (BWROG) have been developing a guideline for flaw evaluation and remedial actions for IGSCC. A draft of this has recently been submitted for BWROG approval. After the BWROG position on the guideline is determined, we may decide to adopt all or part of it in response to this item.

Very truly yours,

*W.D. Harrington*

Commonwealth of Massachusetts)  
County of Suffolk )

Then personally appeared before me W. D. Harrington, who, being duly sworn, did state that he is Senior Vice President - Nuclear of the Boston Edison Company, the applicant herein, and that he is duly authorized to execute and file the submittal contained herein in the name and on behalf of the Boston Edison Company and that the statements in said submittal are true to the best of his knowledge and belief.

My Commission expires: 4-14-89

*Marcus DeCamp*  
Notary Public

cc: Darrell G. Eisenhut, Director  
Division of Licensing

PMK/dvb