



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

ENCLOSURE 1

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

EVALUATION OF NRC GENERIC LETTER 88-01 RESPONSE

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION, UNITS 1 and 2

DOCKET NOS. 50-352 AND 353

1.0 INTRODUCTION

Philadelphia Electric Company, the licensee, submitted its response to NRC Generic Letter (GL) 88-01, "NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping" for Limerick Generating Station, Units 1 and 2, by letters dated August 2, 1988, and May 30, 1989. Additional information was requested by the staff. However, the licensee did not provide the information requested. Thus, the review is based on the information submitted by the licensee as dated above. GL 88-01 requested Licensees and construction permit holders to resolve the IGSCC issue for BWR piping made of austenitic stainless steel that is 4 inches or larger in nominal diameter and contains reactor coolant at a temperature above 200 degrees Fahrenheit during power operation regardless of Code classification. The licensee was requested to address the following:

1. The current plans regarding pipe replacement and/or other measures taken to mitigate IGSCC and provide assurance of continued long term integrity and reliability.
2. The Inservice Inspection (ISI) Program to be implemented at the next refueling outage for austenitic stainless steel piping covered under the scope of this letter that conforms to the staff positions on inspection schedules, methods and personnel, and sample expansion included in GL 88-01.
3. The Technical Specification change to include a statement in the section on ISI that the ISI Program for piping covered by the scope of this letter will be in staff positions on schedule, methods and personnel, and sample expansion included in GL 88-01 (See model BWR Standard Technical Specification enclosed in GL 88-01). It is recognized that the Inservice Inspection and Testing sections may be removed from the Technical Specifications Improvement programs. In this case, this requirement shall remain with the ISI section when it is included in an alternative document.
4. The confirmation of your plans to ensure that the Technical Specifications related to leakage detection will be in conformance with the staff positions on leak detection included in GL 88-01.

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5. The plans to notify the NRC in accordance with 10 CFR 50.55a(g) of any flaws identified that do not meet IWB-3500 criteria of Section XI of the Code for continued operation without evaluation, or a change found in the condition of the welds previously known to be cracked and your evaluation of the flaws for continued operation and/or your repair plans.

## 2.0 DISCUSSION

The licensee's response to NRC GL 88-01 has been reviewed by the staff with the assistance of its contractor, Viking Systems International (VSI). The Technical Evaluation Reports (TER) provided as Attachments 1 and 2 are VSI's evaluations of the licensee's responses to NRC GL 88-01. The staff has reviewed the TERs and concurs with the evaluations, conclusions, and recommendations contained in the TERs. The staff finds that the licensee's responses are acceptable, with the following exceptions:

1. The licensee's position not to amend the Technical Specification (TS) to include a statement on ISI as required by GL 88-01.
2. The licensee's failure to address four and part of one of thirteen GL 88-01 items:
  - a. the requirement pertaining to amending the TS to include limiting the increase in leakage to 2 gpm over a 24 hour period.
  - b. clamping devices, weld overlays, hydrogen water chemistry, and stress improvement process.
3. The licensee's failure to provide actual inspection plans and to address a number of anomalies in GL 88-01 and RAI, e.g., explanation why some seam welds were assigned IGSCC classification and included in summary tables while other seam welds were not, and failure to provide justification why RWCU welds outside containment are inaccessible.
4. The licensee's present TS requirement and position to monitor leakage every twelve hours instead of GL 88-01 requirement to monitor leakage every four hours.

For discussion of these items see sections 2.0 and 3.0 of the attached TERs.

After discussions with several BWR operators the staff concluded that monitoring every four hours creates an unnecessary administrative hardship to plant operators. Thus, RCS leakage measurements may be taken every eight hours instead of every four hours as required in GL 88-01. The above identified items with regards to TS amendments have been approved by the Committee to Review Generic Requirements (CRGR) as part of GL 88-01.

### 3.0 CONCLUSION

Based on the review of the licensee's NRC GL 88-01 response the staff concludes that the response as evaluated is acceptable with the exception of the licensee's positions as identified above. The licensee should be requested to submit TS changes that would require an ISI statement per GL 88-01 and the staff's GL 88-01 position with regard to leak detection as identified above. In addition, the licensee should provide the missing information discussed in various sections of the attached TERS (e.g., the composition of materials to justify the Category of welds, classification of some welds, basis for classifying nickel alloys as Category A, etc.) Furthermore, since the licensee did not provide actual inspection schedules in their response, they should be requested to submit their IGSCC inspection plans for staff review at least three months prior to the beginning of each refueling outage. The licensee should also be requested to provide justification for their apparent position that the RWCU welds outside containment are inaccessible (rather than just considered so); otherwise, these welds should be included in the IGSCC UT inspection plan. The staff also concludes that the proposed IGSCC inspection and mitigation program will provide reasonable assurance of maintaining the long-term structural integrity of austenitic stainless steel piping at the Limerick Generating Station, Units 1 and 2.

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Dated: March 6, 1990