



PERRY NUCLEAR POWER PLANT

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United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Perry Nuclear Power Plant
Docket No. 50-440
Six Month Response to Generic Letter 92-01, Revision 1, Supplement 1,
Reactor Vessel Structural Integrity

Gentlemen:

By letters dated July 2, 1992 (PY-CEI/NRR-1500L), and October 25, 1993 (PY-CEI/NRR-1699L), the Perry Nuclear Power Plant (PNPP) response to Generic Letter (GL) 92-01, Revision 1, "Reactor Vessel Structural Integrity, 10 CFR 50.54(f)" was provided. The NRC staff, in its April 6, 1994 letter, presented data taken from the PNPP response to GL 92-01, Revision 1, and previously docketed information and requested that PNPP "verify the information for your facility is accurate as indicated in Enclosures 1 and 2." The results of this verification were confirmed by a letter dated June 16, 1994 (PY-CEI/NRR-1812L).

The NRC subsequently issued GL 92-01, Revision 1, Supplement 1, "Reactor Vessel Structural Integrity," asking licensees to review data pertaining to Reactor Pressure Vessel (RPV) integrity. In accordance with the reporting requirements of the supplement, the PNPP response to information requirement (1) was provided in a letter dated August 17, 1995 (PY-CEI/NRR-1977L). The information required in response to requirements (2), (3), and (4) is presented in Attachment 1.

In addition, the results of the actions described in the response to information requirement (1) are discussed in Attachment 2.

If you have questions or require additional information, please contact Mr. James D. Kloosterman, Manager - Regulatory Affairs at (216) 280-5833.

Very truly yours,

TAH:sc

Attachment

cc: NRC Project Manager
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PERRY NUCLEAR POWER PLANT
RESPONSE TO GENERIC LETTER 92-01, REVISION 1, SUPPLEMENT 1
INFORMATION REQUIREMENTS 2, 3, AND 4

Item (2) Provide an assessment of any change in best-estimate chemistry based on consideration of all relevant data.

Response: The maximum copper content in PNPP welds in the area of concern, based on current documentation, is 0.06 per cent. Review of sister plant data where the same heats have been used has not identified any concerns with respect to the reported chemistries. The conclusion is that the current Pressure-Temperature (P-T) curves and supporting analyses are correct. Based on this data, there is no change in the best-estimate chemistry for PNPP Unit 1.

The industry response to this GL Supplement, developed by the Boiling Water Reactor Vessel Internals Project (BWRVIP), addresses the impact of weld chemistry variability on upper shelf energy (USE) evaluations and P-T curves. This report presents an analysis of bounding conditions for USE at end of life for plants with weld copper content as high as 0.35 per cent. Since the PNPP chemistry data is bounded by this analysis, it appears, based on this draft report, that sufficient margin exists to satisfy the guidance established in Regulatory Guide (RG) 1.99, Revision 2.

Item (3) Provide a determination of the need for use of the ratio procedure in accordance with the established Position 2.1 of Regulatory Guide 1.99, Revision 2, for those licensees that use surveillance data to provide a basis for the RPV integrity evaluation.

Response: Position 2.1 of RG 1.99, Rev. 2 establishes a method which can be used to adjust the beltline reference temperature for effects of chemistry and irradiation based on the results of at least two surveillance capsule tests. The ratio procedure would not be applicable to PNPP since relevant data indicates that the test specimens are representative of the limiting weld chemistries in the vessel. In addition, no PNPP specimens have yet been pulled; the initial specimens are scheduled to be removed during the next refueling outage.

Item (4) Provide a written report providing any newly acquired data as specified above and (1) the results of any necessary revisions to the evaluation of RPV integrity in accordance with the requirements of 10 CFR 50.60, 10 CFR 50.61, Appendices G and H to 10 CFR Part 50, and any potential impact on the LTOP or P-T limits in the technical specifications or (2) a certification that previously submitted evaluations remain valid. Revised evaluations and certifications should include consideration of Position 2.1 of Regulatory Guide 1.99, Revision 2, as applicable, and any new data.

Response: No additional data has been located and no revisions to any previous submittals are necessary. Previously submitted evaluations remain valid. An extensive review of available documentation and information relevant to the RPV beltline neutron embrittlement test specimens has been performed. We are confident that Perry has the pertinent material information and that it is accurate.

Industry efforts are currently underway to accumulate vessel material data for BWRs (2 through 6). These efforts are being coordinated by the BWRVIP and the Nuclear Energy Institute (NEI). Although there is high confidence that the pertinent PNPP data has been located and reviewed, it is prudent to support this industry undertaking. The results of these longer term efforts may reveal additional sources of information of value to RPV integrity analyses. The BWRVIP response to this GL Supplement describes the actions taken to date, those actions planned, and provides analysis for the conclusions reached in that collective response.

The BWRVIP has constructed a database of limiting materials and known fluences for BWR plants (2 through 6) and has assessed chemical variations in the material vendor manufacturing process. In addition, the BWRVIP is attempting to provide bounding analyses based on maximum copper content of these plants and a worst case fluence to illustrate that the plants remain above the limiting upper shelf energy (35 foot-pounds based on the Equivalent Margin Analysis). PNPP data has been reviewed with respect to this analysis and found to be accurate. The approach pursued by the BWRVIP is unified, efficient, and credible, and the results of this approach will continue to be evaluated with respect to PNPP data.

PERRY NUCLEAR POWER PLANT
GENERIC LETTER 92-01, REVISION 1, SUPPLEMENT 1
INFORMATION REQUIREMENT 1
DISCUSSION OF ACTIONS TAKEN

The following response was provided in a letter dated August 17, 1995 (PY-CEI/NRR-1977L):

Item (1) Provide "a description of those actions taken or planned to locate all data relevant to the determination of RPV integrity, or an explanation of why the existing data base is considered complete as previously submitted;"

Response: PNPP will undertake a two-step approach to ensure the data relevant to the determination of RPV integrity has been located. First, another review of the currently known data relevant to RPV integrity will be conducted to verify completeness. Secondly, PNPP will make inquiries with the RPV supplier to ascertain whether any additional pertinent information is available. These actions will be completed in support of the follow-on response to this GL supplement.

The above actions have been completed, with the following results:

The specimen material listed in the Updated Safety Analysis Report (USAR) was validated against the certified material test reports from the vessel supplier, Chicago Bridge and Iron - Nuclear (CBIN). The information provided to the NRC in previous responses to this issue is correct. Additionally, the Surveillance Test Specification Documentation and Surveillance Test Specimen Preparation Plan provided by CBIN were reviewed. Finally, a specimen capsule from the canceled PNPP Unit 2 was opened to inspect the specimens and identification markings to confirm the specimens were consistent with the documentation provided by CBIN.

CBIN was contacted to discuss the material records located at the PNPP site and the possibility of additional information on vessel beltline material. The general conclusion was that the PNPP documentation was accurate and complete.

Support for the development of an industry response to this issue was also discussed in the letter dated August 17, 1995. This industry effort has provided valuable information and the continued support of this effort is discussed in the previous Attachment.