



**Consumers
Power**

**POWERING
MICHIGAN'S PROGRESS**

Big Rock Point Nuclear Plant, 10269 US-31 North, Charlevoix, MI 49720

Patrick M Donnelly
Plant Manager

August 18, 1995

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-155 - LICENSE DPR-6 - BIG ROCK POINT PLANT - REPLY TO GENERIC LETTER 92-01, REVISION 1, SUPPLEMENT 1: REACTOR VESSEL STRUCTURAL INTEGRITY.

This letter was originally submitted on August 11, 1995, however the required oath or affirmation was inadvertently omitted. This letter forwards the complete response.

On May 19, 1995, the Nuclear Regulatory Commission issued a supplement to Generic Letter (GL) 92-01, Revision 1. The supplement required that all addressees identify, collect and report any new data pertinent to analysis of structural integrity of their reactor vessels (RPVs) and to assess the impact of that data on their RPV integrity analyses relative to the requirements of Section 50.60 of Title 10 of the Code of Federal Regulations (10 CFR 50.60), 10 CFR 50.61, Appendices G and H to 10 CFR Part 50, (which encompass pressurized thermal shock (PTS) and upper shelf energy (USE) evaluations) and any potential impact on low temperature overpressure (LTOP) limits or pressure-temperature (P-T) limits.

Addressees were required to respond providing the following information within 90 days (August 16, 1995) from the date (May 19, 1995) of the GL:

- (1) 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

Then, within 6 months of the date of the GL (November 19, 1995), additional information required below is required:

- (2) An assessment of any change in best-estimate chemistry based on consideration of all relevant data.
- (3) 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; and

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- (4) 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.

Licensee Response

- (1) *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.*

The existing data base is considered complete as previously submitted in a letter dated October 4, 1993. As documented previously, the heat numbers for the weld wires that were used in the Big Rock Point reactor pressure vessel (RPV) are not available. Several attempts to locate these records from the manufacturer, Combustion Engineering Incorporated, have confirmed the absence of this data. The effort includes the Combustion Engineering RPV Owners Group, which in the last few years has taken great efforts to locate, index, and provide this information to RPV owners. Efforts to locate the lost data go back as far as the late 1970s and includes joint efforts of Consumers Power Company and Combustion Engineering personnel at the Chattanooga manufacturing facility. All record searches to date have been unsuccessful. Combustion Engineering was the largest manufacturer of RPVs, and currently has the largest and most complete data in the industry. Allocating resources for this endeavor appears to have no benefit; therefore future record searches will not be pursued.

Licensee Response

- (2) *An assessment of any change in best-estimate chemistry based on consideration of all relevant data.*

All relevant data has been considered resulting in no change in best-estimate chemistry.

- (3) *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; and*

In a Request for Information forwarded from the Nuclear Regulatory Commission to Consumers Power Company dated June 30, 1993, a response with regard to providing initial upper-shelf energy (USE) and chemistry data for all beltline welds, except for the surveillance weld, was requested. If the information could not be provided, then an analysis was to be submitted which demonstrates that lower values of USE will provide margins of safety against fracture equivalent to those required by Appendix G of the ASME code.

Consumers Power's reply informed the Commission that the requested information could not be provided; therefore an analysis (in accordance with the established Position 2.1 of Regulatory Guide 1.99, Revision 2) performed by Combustion Engineering was provided. The analysis concluded that:

" the application of ASME Code Case N-512 evaluation procedures and acceptability criteria have been utilized in the evaluation of the Big Rock Point reactor vessel welds. The available design and licensing information associated with the Big Rock Point plant has been considered to the extent possible to determine the loading conditions which the Big Rock Point reactor vessel may incur during its remaining operational lifetime. Material characteristics representative of the beltline welds were identified and utilized in the evaluation. Utilization of the ASME Code, Section III, Appendix G exist for axial or circumferential welds exhibiting at least 30 ft-lb Charpy upper-shelf energy. In addition, utilizing available material information associated with the Big Rock Point reactor vessel welds, a conservative end-of-life estimate of upper-shelf energy was determined to be 46.2 ft-lb".

By letter dated September 14, 1994, the Office of Nuclear Reactor Regulation issued "Upper Shelf Energy Equivalent Margins Analysis - Safety Evaluation for the Big Rock Point Vessel Beltline Welds - Consumers Power Company - Docket Number 50-155". The Review Summary states:

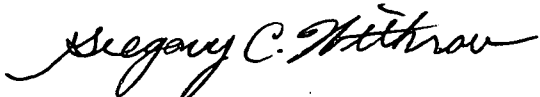
"In their responses to Generic Letter (GL) 92-01 and to the subsequent staff requests for additional information (RAIs), the Consumers Power Company, the licensee for the Big Rock Point Plant, has shown that limited data are available concerning Charpy V Notch (CVN) testing and chemical composition analysis for the units reactor pressure vessel (RPV) beltline welds. The licensee, deeming that it was unlikely that source data would be located, performed an evaluation to demonstrate that the RPV beltline welds will have upper shelf toughness properties at end of license (EOL) that provide margins of safety equivalent to those required by Appendix G of the ASME code as specified in Appendix G to 10 CFR 50. The staff has reviewed this analysis and determined that the licensee used methodology, modeling procedures, and acceptance criteria which fall within the scope of Draft Regulatory Guide DG-1023 and the welds' unirradiated upper shelf energy (UUSE) and validity of the consistent, or conservative with respect to, staff positions. The staff has completed an independent review of the information available on the RPV beltline welds. On the basis of the staff's analysis and information supplied by the licensee, the staff has determined that the margins of safety against fracture which exist for the unit's axial and circumferential beltline welds will be equivalent to those required by Appendix G of the ASME Code throughout the currently licensed operating life of the plant."

- (4) *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.*

NUCLEAR REGULATORY COMMISSION
BIG ROCK POINT PLANT
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Since no new or additional data has been acquired, providing a written report is not required.



Gregory C Withrow
Plant Safety and Licensing Director

CC: Administrator, Region III, USNRC
NRC Resident Inspector - Big Rock Point

ATTACHMENT

CONSUMERS POWER COMPANY

Big Rock Point Plant
Docket 50-155 License DPR-06

Response to Generic Letter No 92-01, Revision 1, Supplement 1
Dated August 18, 1995

At the request of the Commission and pursuant to the Atomic Energy Act of 1954 and the Energy Reorganization Act of 1974, as amended, and the Commission's Rules and Regulations thereunder, Consumers Power Company submits our response to NRC letter dated August 18, 1995, entitled, "REACTOR VESSEL STRUCTURAL INTEGRITY." Consumers Power Company's response is dated August 18, 1995.

CONSUMERS POWER COMPANY

To the best of my knowledge, information and belief, the contents of this submittal are truthful and complete.

By

Gregory C. Wetrow
Plant Safety and Licensing Director

Sworn and subscribed to before me this 18th day of August 1995.

Carolyn M Moeggenberg
Carolyn M Moeggenberg, Notary Public
Charlevoix County, Michigan

My commission expires November 11, 1995.

(SEAL)