

Duquesne Light Company

Beaver Valley Power Station
P.O. Box 4
Shippingport, PA 15077-0004
(412) 393-5206
(412) 643-8069 FAX

GEORGE S. THOMAS
Division Vice President
Nuclear Services
Nuclear Power Division

November 17, 1995

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

**Subject: Beaver Valley Power Station, Unit No. 1 and No. 2
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
Generic Letter 92-01, Revision 1, Supplement 1
Reactor Vessel Structural Integrity Six Month Response**

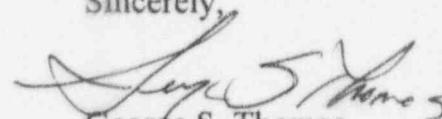
The enclosed information is provided in response to Generic Letter 92-01, Revision 1, Supplement 1, "Reactor Vessel Structural Integrity." The first required response was due within 90 days of the generic letter and was submitted August 17, 1995. This submittal satisfies the second required response that is due within six months of the date of the generic letter. The generic letter six month submittal requires that all licensees provide the following information relative to the determination of reactor pressure vessel integrity:

- an assessment of any change in best-estimate chemistry,
- a determination of the need for use of the ratio procedure from Regulatory Guide 1.99, Revision 2, and
- a written report providing any newly acquired data and, either, the results of revisions to evaluations of RPV integrity or a certification that previously submitted evaluations remain valid.

The enclosure addresses these remaining three items from the generic letter and satisfies the Nuclear Regulatory Commission's request for a review and subsequent re-evaluation, if necessary, of issues pertaining to reactor pressure vessel integrity.

If you have any questions regarding the attached information, please contact Mr. T. F. Huminski, Nuclear Engineering Department at (412) 393-5701.

Sincerely,


George S. Thomas

220015

Enclosure

c: Mr. L. W. Rossbach, Sr. Resident Inspector
Mr. T. T. Martin, NRC Region I Administrator
Mr. D. S. Brinkman, Sr. Project Manager

9511270005 951117
PDR ADOCK 05000334
P PDR

A028
1/1

Enclosure

DUQUESNE LIGHT COMPANY BEAVER VALLEY POWER STATION Unit 1 and Unit 2

Response to NRC Generic Letter 92-01, Revision 1, Supplement 1 Reactor Vessel Structural Integrity

Generic Letter 92-01, Revision 1, Supplement 1 was issued May 19, 1995, to require all holders of operating licenses to identify, collect, and report any new data pertinent to analysis of structural integrity of their reactor pressure vessel and to assess the impact of that data on the reactor pressure vessel (RPV) integrity analyses relative to the requirements of 10 CFR 50.60, 10 CFR 50.61, and Appendices G and H to 10 CFR 50.

Licensees were required to submit a written response, within 90 days from the date of the generic letter, providing a description of those actions taken or planned to locate all data relevant to the determination of RPV integrity, or providing an explanation of why the existing data is considered complete as previously submitted. The results of follow-up actions to assess best-estimate chemistry data, the need for use of the Regulatory Guide 1.99, Revision 2, Position 2.1 ratio procedure, and the results of evaluations using the newly acquired data are required within six months from the date of issuance of the generic letter.

Background:

The Beaver Valley Unit 1 and Unit 2 reactor vessels were manufactured for Westinghouse Electric Corporation by Combustion Engineering at their Chattanooga, Tennessee facility under contract numbers 5069 and 9071, respectively.

The beltline plates in both vessels are SA 533 Grade B Class 1 material. The beltline welds are submerged arc welds using a B-4 Modified (MnMo) filler wire.

For the Unit 1 beltline axial welds, the filler wire was copper coated and contained nickel. The beltline circumferential weld filler wire was also copper coated but contained low nickel. All the beltline welds are single heat welds. The review of available industry data for the Unit 1 beltline weld metal heats of record has resulted in the conclusion that the best-estimate chemistry values have not increased, and as such, the beltline welds have not become the limiting material for the Unit 1 vessel. The axial welds are located at a low fluence location on the vessel, and the circumferential weld has moderate copper and low nickel content. Therefore, a Unit 1 vessel plate material is limiting for the purpose of Unit 1 reactor vessel integrity evaluations.

Enclosure

Response to Generic Letter 92-01, Revision 1, Supplement 1

Reactor Vessel Structural Integrity

Page 2

The Unit 2 vessel was manufactured after 1971 and contained plates and weld wire with a specified maximum copper content of 0.10 percent. Consequently, the radiation sensitivity of the Unit 2 vessel is low, and a plate material is limiting for the purpose of Unit 2 reactor vessel integrity evaluations.

Activities to Identify Relevant Data and Sources:

The 90 day response to the generic letter supplement outlined actions to identify the relevant information which may affect vessel integrity evaluations. Those actions are complete and the results are summarized below.

Verification of sister vessels was done using the available data bases, RPVDATA by the Westinghouse Owners' Group, RVID by the NRC, and PREP3 and RMATCH from EPRI. The heats of weld wire in the Unit 1 and 2 vessel beltline regions, common to other reactor vessels and identified by RVID, were confirmed by RPVDATA. The information in PREP3 and RMATCH was consistent with RPVDATA and RVID as far as is possible with the versions presently available. The beltline base metal heats in both Beaver Valley vessels do not appear common to other beltline base metals of sister vessels as identified in the databases or in Westinghouse or Duquesne Light records.

Westinghouse Electric was requested to provide copies of documents containing data relevant to the integrity of the Beaver Valley vessels. The material provided from the Westinghouse vessel integrity files was reviewed by Duquesne Light Co. and included in the compilation of data. In addition to the surveillance capsule test information, Westinghouse records contained source documents for the plate and weld tests performed by the material supplier and Combustion Engineering. This information confirmed the data received by Duquesne Light from the ABB/CE Reactor Vessel Group Phase II program and the data submitted in response to Generic Letter 92-01, Revision 1, dated July 8, 1992.

The sister vessel owners were contacted to verify the data on the beltline materials and were requested to provide additional data, if available. Additional chemistries for weld heat 90136 were received from the FP&L surveillance capsule reports. This weld heat is also used in the Beaver Valley Unit 1 beltline region. Many of the existing chemistry data points for the other Unit 1 weld heats and the Unit 2 weld heat were confirmed by the records of the sister vessels. Additional chemistry data was included in the data compilation, and the new "best-estimate" copper and nickel values were found to be the same as, or lower than, the docketed values for Beaver Valley.

No data was located which changes the values of the controlling materials for either Beaver Valley Unit 1 or Unit 2 reactor vessels.

ABB/Combustion Engineering was contacted to confirm the identity of the sister vessels to the Beaver Valley reactor vessels. ABB/CE is currently compiling a matrix of sister vessels and materials for the vessels constructed by Combustion Engineering. This matrix is unique in that it will include vessels other than reactor vessels. The anticipated completion date will not support this response. However, upon receipt of the matrix, it will be examined to determine if additional data relevant to Beaver Valley has been identified. If the responses to the following three NRC requests are affected by this new information, then a revised response will be provided.

Responses to the NRC Generic Letter 92-01, Revision 1, Supplement 1 Questions:

NRC Request 2:

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

DLC Response 2:

The limiting material for determining RPV integrity on both Unit 1 and Unit 2 vessels is a beltline plate material. A review of the data bases has identified no identical matches of heats for these limiting plates and only a slightly lower best-estimate copper for one weld heat. Since there is no change to the best-estimate chemistry data for the limiting vessel plate materials, there will be no impact to structural integrity of the reactor vessel for either Unit.

NRC Request 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.

DLC Response 3:

A determination of the Unit 1 vessel integrity has been made using surveillance capsule data. The ratio procedure of Regulatory Guide 1.99, Revision 2, Position 2.1 was considered for applicability to the data. The average copper of the surveillance weld differs from the "best-estimate" copper of the vessel weld by less than 0.02 percent, and the nickel values are identical. Therefore, there is no

evidence of a difference in the chemistry values, and the ratio procedure is not invoked.

The Unit 2 vessel integrity determinations have been made using the "best-estimate" chemistry values without the use of surveillance capsule data. Only one capsule has been tested to date, and therefore Position 2.1 is not applicable for Unit 2. In addition, the beltline welds were limited to 0.10 percent copper, which results in an RT_{PTS} at end-of-license life of less than 100°F and the vessel being plate limited for the integrity evaluations.

NRC Request 4:

Submit 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 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.

DLC Response 4:

As a result of the efforts completed in response to Supplement 1 of Generic Letter 92-01, Revision 1, no new information has become available on the limiting materials of either Unit's reactor vessel, and the previously submitted analyses for the Beaver Valley Unit 1 and Unit 2 reactor vessels remain valid.