



Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

September 24, 1993

U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, DC 20555

Attention: Document Control Desk

Subject: Additional Information Regarding Generic Letter 92-01 Revision
1, "Reactor Vessel Structural Integrity"

Dresden Station Units 2 and 3,
(NRC Dockets 50-237 and 50-249)

Quad Cities Station Units 1 and 2,
(NRC Dockets 50-254 and 50-265)

LaSalle County Station Units 1 and 2,
(NRC Dockets 50-373 and 50-374)

TAC Numbers M83458, M83459, M83501, M83502,
M83475, and M83476

- Reference: (1) Letter from M.A. Jackson to Dr. T.E. Murley dated
July 1, 1992.
- (2) Letter from J.L. Kennedy to D.L. Farrar dated
July 19, 1993.

The purpose of this letter is to provide additional information regarding the Commonwealth Edison (CECo) response contained in Reference (1) to Generic Letter 92-01, Revision 1. This additional information on the reactor vessel structural integrity issues for Dresden, Quad Cities, and LaSalle County Stations was requested in the Reference (2) letter. The CECo response to the NRC questions is contained in an attachment to this letter.

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September 24, 1993

If there are any questions or comments, please contact me at (708) 663-7292.

Sincerely,



David J. Chrzanowski
Generic Issues Administrator
Nuclear Regulatory Services

Attachments: Response to Questions On Generic Letter 92-01 Revision 1

cc: J. Martin, Regional Administrator-RIII
 J. Stang, Dresden Project Manager-NRR/PDI-2
 C. Patel, Quad Cities Project Manager-NRR/PDI-2
 J. Kennedy, LaSalle Project Manager-NRR/PDI-2
 M. Leach, Senior Resident Inspector (Dresden)
 T. Taylor, Senior Resident Inspector (Quad Cities)
 D. Hills, Senior Resident Inspector (LaSalle)

Attachment
Response to Questions On Generic Letter 92-01 Revision 1

Dresden Units 2 and 3, Quad Cities Units 1 and 2

GL 92-01, Question 2a:

"In your response to GL 92-01, you stated that a General Electric (GE) method described in Report GE-NE-523-18-1191 was used to predict initial Charpy upper-shelf energy (USE) of beltline materials from tests performed at a single temperature. Report GE-NE-523-18-1191 was subsequently withdrawn by GE and a topical report, NEDO-32205, entitled "BWR Owners' Group Topical Report on Upper Shelf Energy Equivalent Margin Analysis," regarding beltline materials with low USE, was submitted by GE on April 30, 1993. This RAI asks that you confirm that the topical report (NEDO-32205) will be used as your licensing bases to demonstrate that all beltline materials that do not have measured USE will meet the requirements of Appendix G to 10 CFR Part 50."

CECo Response:

Pending resolution of NRC comments, CEC Co intends to use GE topical report NEDO-32205 as the licensing basis to demonstrate that all beltline materials that do not have measured USE will meet the requirements of Appendix G to 10 CFR Part 50.

Dresden Units 2 and 3, Quad Cities Units 1 and 2, and LaSalle Units 1 and 2

GL 92-01, Question 2b

"Your response indicated that data from the dropweight test and Charpy test for beltline materials is either absent or incomplete for initial RT_{NDT} determination. An alternative method developed by GE was used on deriving initial RT_{NDT} for these materials. In the GE method, the establishment of the slope for the transition zone of the Charpy curve is crucial in deriving the initial RT_{NDT} from incomplete test data. This RAI requests you to provide all plate and weld Charpy test curves compiled by GE for establishing the 2°F per ft-lb slope for the transition zone of the Charpy curve. All test data must be from materials equivalent to (i.e., same vendor, fabrication time frame, fabrication process, material specification, etc.) beltline materials of this reactor vessel."

CECo Response:

The 2°F/ft-lb initial RT_{NDT} adjustment developed by GE was based on a mean value approach using Linde 124 data for submerged arc weld (SAW) material, and SA-533 data for plate. A document describing the methodology used to derive the 2°F/ft-lb adjustment has been prepared for the BWR Owners Group (BWROG) by GE and will be submitted to the NRC by the BWROG.

In the years since the 2°F/ft-lb adjustment was developed, data which is directly representative of the Babcock & Wilcox (B&W) Linde 80 SAW material in the Dresden Unit 2 and 3 and Quad Cities Unit 1 beltline regions has become available in B&W Owners Group (BAWOG) report BAW-1803, Revision 1, May 1991, "Correlations for Predicting the Effects of Neutron Radiation on Linde 80 Submerged-Arc Welds." This report has been submitted to NRC Staff by the Owners Group. Using the data of BAW-1803 Rev.1, the initial RT_{NDT} for Linde 80 welds is -5°F, and the initial RT_{NDT} standard deviation, σ_I , is 20. The adjusted reference temperature (ART) calculated using these values, along with the highest fluence and chemistry factor of the Linde 80 SAW material found in the Dresden Unit 2 and 3 and Quad Cities Unit 1 reactor vessels, is higher than that predicted using the 2°F/ft-lb adjustment. However, the electrosag weld (ESW) material, with its conservatively determined initial RT_{NDT} of 40°F, remains the limiting material in the Dresden Unit 2 and 3 and Quad Cities Unit 1 and 2 reactor vessels for determination of their Pressure-Temperature curves.

A review of CECo unirradiated surveillance capsule material Charpy curves confirms that the 2°F/ft-lb adjustment is conservative for the SA-302 Grade B Modified plate found in the Dresden Unit 2 and 3 and Quad Cities Unit 1 and 2 reactor vessels.

The 2°F/ft-lb adjustment is therefore still applicable to the Linde 124 SAW material of Quad Cities Unit 2 and LaSalle Unit 1 and 2, and the plate material of Dresden Unit 2 and 3, Quad Cities Unit 1 and 2, and LaSalle Unit 1 and 2.