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January 23, 1995

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RULES REVIEW & DIR. BR.
USNRC

Mr. John C. Hoyle
Acting Secretary
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

L. Shao
59KRS5866
11/9/94
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ATTENTION: Docketing and Service Branch

SUBJECT: Comments on Proposed DG-1027; Draft Regulatory Guide, Format and Content of Thermal Annealing of Reactor Pressure Vessels

Dear Mr. Hoyle:

The Board on Research and Technology Development of the Center for Research and Technology Development (CRTD) of the American Society of Mechanical Engineers (ASME), is working in partnership with an industry research team to demonstrate the technical viability of reactor annealing for the commercial nuclear power industry. This team (in addition to ASME's CRTD) is comprised of representatives from the American Electric Power, Consumer Power, Cooperheat, Inc., the Electric Power Research Institute (EPRI), Westinghouse Electric Corporation, and the Westinghouse Owners' Group. Additionally, the team has responded to a Sandia National Laboratory request for bid on a government-industry co-funding effort to demonstrate reactor vessel annealing. The overall objective of the program is to verify the dimensional stability of the reactor vessel and all appurtenances during an in-situ annealing process.

The team is proposing to use an innovative, economically viable heat source with the intent to raise the temperature of the reactor vessel at Marble Hill to 850 degrees Fahrenheit and maintain that temperature for a period of one week. The group plans to demonstrate heater controllability, heat up rate, cool down rate, and dimensional stability. As part of the demonstration, the team will perform thermal and stress analyses, and install an instrumentation and data acquisition system to collect information on temperature, displacement, and strain to monitor and control the process, and to provide data for evaluating reactor annealing.

The ASME Board on Research and Technology Development Steering Committee on Reactor Vessel Annealing has reviewed the proposed guide, DG-1027; Draft Regulatory Guide, Format and Content of Thermal Annealing of Reactor Pressure Vessels. This position statement reflects the expert views of the Steering Committee and is not necessarily a position of ASME as a whole. We offer the following comments for the NRC staff consideration:

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1) Section 1.1, page 6, line 32.

Current wording says " _____ including the power-time-temperature history."

It is recommended that the above sentence be modified as follows:

"including the power-time-temperature history; these data may be either actual data recorded or extrapolated from other plant operational data and so identified."

COMMENT: Such detailed information may not be readily available at all plants and may have to be extracted from other plant operating parameters.

2) Section 1.1, page 7, line 2.

It is recommended that the following sentence be added to end of the paragraph, after the last sentence.

" _____ Charpy upper-shelf energy values, determined either by analysis or testing.

COMMENT: The Submittal for the vessel annealing should be filed three years before the actual annealing date. At this time, i.e. time of submittal, surveillance capsules may not be available to determine the pre-annealing RTNDT and Charpy energy values.

3) Section 1.5, page 10, line 5.

Add the following sentence at the end of the paragraph:

" _____ in the pressure vessel. The annealing method selected should describe the type of annealing such as wet or dry annealing; electric or gas as the heat source."

COMMENT: References have been made in the overall document only to electrical resistance heating. That should not preclude use of gas as a heat source.

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4) Section 2.1, page 14, line 14.

"The measurement devices should be in physical contact with the component when the temperature is being measured."

COMMENT: This assumes too much about the nature of the temperature measurement devices. For example, infrared pyrometers do not require direct contact.

Suggested change: Add "Where appropriate..." to the beginning of the above sentence or delete it entirely.

5) Section 3.1.2.1, page 18, line 27.

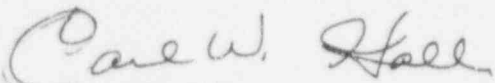
Add the following sentence at the end of paragraph no. 4.

"If the licensee decides to fill-in the depression by weld metal, details of such weld repair should be described in the program."

COMMENT: An option to perform the weld fill-in should be mentioned.

If you have questions concerning these comments, please contact Raymond J. Art ((202) 785-3756) of the ASME CRTD staff.

Sincerely,



Carl W. Hall, P.E.

Vice President, Research and Technology Development

cc: T. Satyan-Sharma - AEP
M. Mayfield - NRC