



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

MAR 16 1982

MEMORANDUM FOR: Richard H. Vollmer, Director  
Division of Engineering

FROM: Joseph Halapatz  
Division of Engineering

SUBJECT: DIFFERING PROFESSIONAL OPINION

This memorandum responds to the memorandum, Vollmer to Halapatz, dated March 8, 1982, subject, "DIFFERING PROFESSIONAL OPINION," which addressed my visit to the General Electric Office at San Jose to review documentation related to my concern. The memorandum requested that you be informed of (1) the dates of my trip and (2) of any difficulty in arranging a meeting with the appropriate people. The memorandum also directed that I provide you a report of my findings and recommended actions within thirty days after my trip.

By this memorandum you are provided an update of the current status of my DPO.

In a telecon with GE\* on March 10, 1982, it was learned that GE objected to my visit, based on concern that my review would develop into an expanded scope review requiring an extensive GE manpower commitment.

GE provided information on plans to perform, under GE and utility sponsorship, a first time comprehensive metallurgical examination of type 304 stainless steel core structurals and internals of a long operating history BWR reactor, the West German KRB reactor, which has been shut down and decommissioned. These components will be removed from the reactor vessel and examined by procedures including dye penetrant inspection. GE stated that plans for the examination are incomplete, but that the examination would be done before the end of the year.

Given GE's objection to my visit to review fabrication procedures, in order to reach resolution of my DPO I submit alternatives:

1. Ongoing reviews of BWR reactor internals (SRP Section 4.5.2, "Reactor Internal Materials") should request that fabrication procedures, including welding and in-process and final heat treatment, be provided for reactor internals.

\*Participants: GE: D. Robare & H. Watanabe (Licensing), Dr. Gordon & J. Cass (Metallurgy), W. Walker & P. Higgins (Services)

NRC: J. Halapatz & E. Sullivan

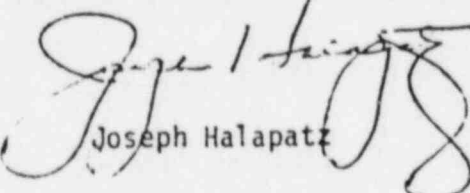
It is inferred from our telecon with GE that high heat input welding was used on some core internals. Given the design of some of the components, such as the core plate, in-process stress relief heat treatments would be required for dimensional stability purposes prior to final machining. Such stress relief normally involves a temperature of about 1650°F or higher to avoid the sensitization range. Paradoxically, however, while a slow cool from the stress relief temperature would favor dimensional stability in such structures, it would likely seriously sensitize the material. On the other hand, if such structures were cooled rapidly from the stress relief temperature in order to minimize sensitization, the structures would likely distort dimensionally. Thus, the assessment of the propensity to IGSCC of material must be based also on its metallurgical heat treatment history. Such history is available to the NRC through SRP 4.5.2.

SRP 4.5.2, III.4, "Austenitic Stainless Steel," commits the reviewer: "The materials and fabrication procedures used for reactor internals are reviewed." Within this context, the metallurgical histories, involving welding and heat treatment pertinent to my DPO, can be made available through ongoing OL reviews.

2. GE's planned comprehensive metallurgical examination of the West German KRB reactor core structurals and internals at end of life deprecates the through-life assessments of integrity invoked by Section XI of the ASME Code.

In order for GE to perform its examination, the KRB reactor core structurals and internals will be removed from the reactor vessel. Section XI, Examination Category B-N-2, however, demands only that undefined "accessible surfaces" of in-place components be examined visually to acceptance standards, which are yet to be developed. There is some question then, related to the efficacy of Section XI requirements in providing assurances of component integrity. A review of inservice inspection records of an operating plant should characterize the assurances of component integrity provided by Section XI ISI. Within this context, I propose the review of the ISI records of Monticello, a Mark I BWR, which completed its 10 year ISI during its 1981 Fall maintenance outage. A review of these records would entail a two day trip to the Monticello site, located approximately thirty miles from Minneapolis, MN.

I will be prepared to propose recommended actions to reach the point of resolution of my DPO within thirty days after implementation of the alternatives I have identified.

  
Joseph Halapatz

cc: W. Johnston, DE  
W. Hazelton, DE  
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J. Thomas, NTEU