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Attn: Mr. Brian J. Benney
Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

July 29, 2003

Subject: Westinghouse Meeting with NRC on Embedded Flaw Repair, General Questions

The purpose of this letter is to provide the NRC staff with an advance copy of the kinds of questions Westinghouse would like to discuss at the subject meeting currently scheduled for the morning of August 7 at OWFN. The questions are provided as an attachment hereto.

If I can be of further assistance please don't hesitate to contact me.

Very truly yours,

A handwritten signature in black ink, appearing to read "H. A. Sepp".

H. A. Sepp, Manager
Regulatory Compliance and Plant Licensing

Official record electronically approved in EDMS 2000

Attachment

cc: D. Holland

T D I O
~~XXXXXXXXXX~~

A BNFL Group company

Repair Questions

1. In Sect. 3.5, reference is made to ASME code case N504, which applies to structural weld overlays for pipes. We understand your philosophy of requiring additional inspection, but would suggest that you drop reference to the code case, since you are not invoking other aspects of it, and it could be confusing to the user. At any rate, code case N504-1 is no longer in print; N504-2 is now in use.
2. In discussing the previously approved relief request for North Anna (ref. 4), you mention that the inspections required were both volumetric and surface, "in accordance with the requirements of N504-1." It is our understanding that no such commitment was made, or implemented. The actual inspection was surface only, when the repair was actually implemented at DC Cook Unit 2.
3. In Sect. 3.5, you also state that, in the absence of demonstrated depth sizing, the flaw must be removed. Westinghouse has successfully demonstrated depth sizing, but this statement seems inconsistent with the other portions of the SER, and it would be good to get this statement clarified.
4. In Sect. 3.1, and at least one other location, the repair weld is described as a temper bead weld. Since the repairs will be made on austenetic materials, temper bead welding will not be used.
5. In Sect. 2.0. Since the 89 edition of the Code is more limiting with respect to repairs than the more recent editions and addenda of the code, it was used as an example for the relief request. The SER states that reconciliation is needed for users of other editions of the code, and this is confusing. Utilities are presently allowed to use portions of later editions and addenda, so please help us to understand why reconciliation is needed here.
6. In Sect. 2.0, second paragraph, you refer to Section III, NB 4453, and other paragraphs. The paragraphs state that cracks or linear indications are unacceptable, but there seems to be no link between this statement and the proposed repair method. Is this paragraph needed, and if so, please explain its purpose.

Analysis Questions

1. In Para. 4 of the cover letter, as part of the NRC review of plant-specific submittals, it is mentioned that the review will be done to ensure that "material presented applies to the specific plant involved." Do you intend to include the materials in Appendix C of the Topical Report as part of that review?
2. In Sect. 5.2, it is mentioned that "the crack growth rate is not applicable to Alloy 600 and 690 weld metal" It would be helpful to clarify which crack growth rate is being referred to (the model discussed in the letter of Ref. 5?), and suggest what to do in such a case.

Inspection Questions

1. Careful reading of the SER reveals that the NRC philosophy is to add additional inspection requirements to ensure that the seal weld repair is monitored. These requirements exceed existing code requirements for seal welds, and in many cases are not practical to implement. It is suggested that these additional inspections be imposed only where practical.

2. In Sect. 3.6.2, it is stated that "currently there is no reliable volumetric method for characterizing the depth of an existing crack", but such an exam is required in the attached table. It is suggested that the entries in the table be modified to call out volumetric or surface exams, or saying that both should be done if practical.
3. In Sect. 3.5, Para. 4, it is stated that "UT inspections from the surface from the surface of the J-groove weld may be capable of detecting flaws at or near the weld surface." This statement would be more appropriate for eddy current testing, as opposed to UT.
4. The inspections planned to comply with the requirements of the SER are listed below. Westinghouse feels that these inspections are in compliance with the SER, but would like to discuss this with the staff.

Inspection of Embedded Flaw Repair Welds

Tube ID Repair

- Weld repair surface is finished, amenable to inspection, both UT and surface exams
- Flaw detection through the repair weld to the tube OD demonstrated per WDI-TJ-007, for saw cuts only)
- Additional demonstration needed here for cracks, but expectation is for success

Tube OD Repair

- Inspection will be from the ID, using 7010 or blade probe
- OD surface can also be inspected by PT

J-Groove Weld

- Inspection requirement per SER: UT plus surface exam coverage must equal 100 percent
- Weld OD repaired surface is considered not accessible for meaningful UT
- Preferred UT inspection is from the tube ID, looking at the triple point
- Demonstration complete for 7010 (MRP Interim Report, 11/02)

Conclusion: Post repair exams are equivalent to pre-repair exams in coverage, as required by the NRC Order, Feb. 02