

Review of May 13, 2004 Internal NMC Memorandum from Charles Tomes to Mark Huting.

The Region III Inspector has reviewed this memorandum and disagrees with the licensee's basis for the key conclusion stated in the Summary section Item 5 which states "Additional dye penetrant examination or eddy current examination of the J-groove welds prior to returning to service are not required or recommended since the structural integrity and leakage integrity has been verified and there is no UT indications that suggest a need for confirmatory PT."

Facts as understood by RIII NRC inspector:

- 1) Licensee identified two patches of crack-like indications in the nozzle 26 J-weld that were not detected by UT examination (based upon RIII inspectors' review of UT data from nozzle 26).
- 2) Licensee attributes this cracking in part to residual stress from weld repairs on nozzle 26 (ref page 5 second paragraph Item 3).
- 3) Licensee has records to suggest other nozzles have weld repairs (e.g. nozzle 27). However reliance on these records is dubious because they are not official construction/ fabrication records and no basis for identifying a weld repair was given (reference RIII inspectors' review of these records).
- 4) Licensee has UT data which identifies recordable weld fabrication anomalies in numerous nozzles (reference table 1 page 11).
- 5) Licensee's reliance on UT data for RPV nozzles to identify J-groove welds which have had repairs would not be accurate. Only nozzles with UT anomalies that extend into the nozzle base material were considered recordable (reference licensee UT procedure 54-ISI-100-11, "Remote Ultrasonic Examination of Reactor Head Penetrations"). For the nozzles that the licensee did identify weld anomalies indicative of fabrication defects, they have concluded that their was no weld repair because it did not extend substantially into the nozzle base material. This is not supported by any fabrication records or requirements. In summary, if the J-groove weld repairs did not involve removal of substantive nozzle base material, the UT data would not have been interpreted by the licensee as a nozzle with a J-groove weld repair.

Conclusions:

These facts suggest that the licensee may have undetected cracks in other J-groove welds. If these cracks are acceptable from a leakage integrity standpoint, the Region III inspector has not been provided a reference to any deterministic analysis that demonstrates this cracking cannot grow through the J-groove weld prior to the next Unit 1 outage. In particular, none of the analysis or NDE discussed in this document provide assurance that leakage will not occur from J-groove weld cracking which was not detected by UT during this outage.

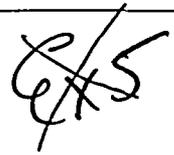
Other:

The Region III inspector noted the following potentially misleading statements in this document:

Licensee refers to documentation of weld repairs in "construction records" in numerous locations. This is not true, the construction/fabrication records for the Unit 1 head do not record any weld repairs to the J-groove welds. Licensee has non-construction NDE records without explicit documentation of the basis for determination of welds with possible weld repairs.

Licensee makes numerous statements and references to the large crack like reflector identified by UT in nozzle 26. This is not correct. Prior to the licensee implementing repairs, the level III analysts had confirmed that this signal was fabrication related and not crack like. See 1st sentence of 5th paragraph on Page 5.

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Page 2 item 8, Page 4 item 4 - Assessments referenced do not demonstrate existing J-groove weld flaws will not grow through the entire J-groove weld within one cycle using current accepted flaw growth rates and cause leakage. Rather probability arguments related to leakage are used and/or structural integrity arguments are made. No deterministic analysis of leakage is performed such as being requested by the staff to support the areas of limited coverage on nozzle 33.

Page 3, first item 1, Second item 4 - It is not logical to assume that the surface condition of PB Unit 1 J-groove welds will require grinding. Based upon PT of nozzles 1 and head vent line locations welds are in very good condition and should be, to have passed the original construction PT exams. Grinding or repairs would only be required if service induced cracks are found!

Page 3, second item 1 - Leakage integrity is confirmed through UT and visual exams. This is a true statement and proves leakage integrity this outage, but it is irrelevant to the question of whether leakage integrity of cracked J-groove welds will be maintained through next operating cycle.