



South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

July 17, 2003
NOC-AE-03001563
10CFR50.55a

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

South Texas Project
Unit 1
Docket No. STN 50-498
Supplemental Response to Request for Additional Information Regarding
Request for Alternative RR-ENG-2-32 (TAC No. MB9696)

Reference: Letter, S. E. Thomas to NRC Document Control Desk, "Response to Request for Additional Information Regarding Request for Alternative RR-ENG-2-32 (TAC No. MB9696)," dated July 3, 2003 (NOC-AE-03001559)

The NRC informally requested additional information regarding our response submitted in the referenced letter. The response to that information request is provided in the enclosure to this letter.

If there are any questions regarding this response, please contact Mr. Michael Lashley at 361-972-7523 or me at 361-972-7902.

A handwritten signature in black ink, appearing to read "Mark E. Kanavos", with a long horizontal line extending to the right.

Mark E. Kanavos
Manager,
Design Engineering

jtc

Enclosure: Supplemental Response to Request for Additional Information

'A047

cc:

(paper copy)

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Supplemental Response to Request for Additional Information

1. **[Regarding the response to Question #2] The licensee indicated that the geometry of the nozzle component gap creates the geometry of a crevice and that the corrosion rate was deemed acceptable under WCAP 15973-P, Rev. 0. The licensee stated that: "The component corrosion analysis used the methodology documented in WCAP 15973-P, Rev. 0, which was reviewed by the NRC and a safety evaluation was issued."**

There is no record in ADAMS that I could find of an existing safety evaluation issued by the staff for the subject WCAP. There is however, an RAI letter issued July 2, 2003 on the subject WCAP. These two items indicate to me that the safety evaluation the licensee referred to has not been issued.

Response

The appropriate reference is CE NPSD-1198-P Rev. 0, which was approved by NRC Safety Evaluation dated February 8, 2002. WCAP 15973-P was submitted for NRC review to correct an error in the NPSD-1198 flaw growth analysis; however, the corrosion evaluation is not affected.

2. **[Regarding the response to question #6] The licensee stated that their successive inspections would be BMV. I don't believe this is sufficient for the following reasons:**
 - a) **Lack of field experience with this type of repair**
 - b) **Typically, other licensees agree and perform post repair UT**
 - c) **The .004" gap between the old and new nozzle sections allow boron to enter in the annulus, which may cause an environment similar to the Davis-Besse configuration, depending on the amount of cracking in the original J-groove weld.**
 - d) **The annulus should be monitored for changes each outage along with the BMV due to c).**
 - e) **The Topical Report the licensee cites previous field experience of half-nozzle repairs performed at ANO-1 in 1990. The repair was UT inspected at the 1st and 2nd refueling outages and is currently UT inspected on an every-other-cycle basis. In light of the existing Order, recent field experience and the new location of cracking in the lower head, the monitoring program of just a BMV proposed by the licensee is not adequate.**

Response

Combustion Engineering plants have extensive experience with half-nozzle repairs to pressurizer heater penetrations and reactor coolant system (RCS) instrument penetrations. No special successive examinations are required by Code Case N-638. The half-nozzle configuration results in a very low oxygen environment in a very tight annular region that is not comparable to the Davis-Besse configuration. WCAP 15973-P addresses the differences between the half-nozzle and Davis-Besse in more detail.

The old J-groove weld is no longer part of the pressure boundary and any cracking in the weld would have no effect on the boron in the annulus area. The annular region will be exposed to RCS water at the 1/16" to 1/8" gap between the top half-nozzle and the bottom half-nozzle.

STP Nuclear Operating Company (STPNOC) performed UT examination of the reactor vessel bottom head (RVBH) BMI bore hole areas of Penetrations 1 and 46 as a baseline for future wastage monitoring. STPNOC will perform UT examinations of the RVBH base material around one of these two BMI penetrations for the next two alternate refueling outages (i.e., 1RE13 and 1RE15) to confirm there is no indication of RVBH base material wastage from RCS water in the annulus region of the repaired penetration. The results of the UT examination will be applicable to both repaired penetrations because both penetrations have the same design configuration, materials, and operating environment. If any indication of wastage is detected by these UT examinations, the corrosion monitoring will be extended to the other repaired penetration during that outage.