VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

December 12, 1986

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Lester S. Rubenstein, Director
PWR Project Directorate No. 2
Division of PWR Licensing-A
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Serial No. 86-819
E&C/DMB/dmb
Docket No. 50-280
License No. DPR-32

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNIT 1
PRESSURIZED THERMAL SHOCK
FINAL RULE SUBMITTAL
WELD IDENTIFICATION SA1526

The Virginia Electric and Power Company letter dated January 23, 1986 (Serial No. 85-628) included an attachment, WCAP 11015, which provided the current and projected pressurized thermal shock reference temperature (RTpts) values for our Surry Power Station Units 1 and 2 pursuant to 10 CFR 50.61. As required in 10 CFR 50.61(b)(1), the projected values were determined up to the time of the expiration date of the current operating licenses.

Projected RTpts values for sixty calendar years of plant operation were transmitted as an attachment to Virginia Electric and Power Company letter dated November 26, 1986 (Serial No. 86-781). These additional projections were determined using the RTpts formulation specified in 10 CFR 50.61(b)(2). The material properties used were the same as those in the original submittal. The fluence was determined using the same models and methods as the original submittal. The additional data presented in the supplemental report were determined in exactly the same manner as the original submittal.

During a recent design review of the Surry Unit 1 surveillance capsule analysis project, Westinghouse informed Virginia Electric and Power Company that the revised reactor vessel surveillance program (RVSP) prepared by Babcock and Wilcox (BAW-1909) listed a lower longitudinal weld seam identification (SA1526) that was not considered in the PTS submittal. We immediately took the following two actions. First, the use of weld identification SA1526 in one of the lower longitudinal seams was confirmed by comparison of the weld wire number and flux to the weld control records obtained from Babcock and Wilcox. Second, Westinghouse revised the PTS calculations presented in WCAP 11015 to address the new material information.



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The determination that weld identification SA1526 was used in the Surry Unit 1 reactor vessel requires an update to the projected RTpts values according to 10 CFR 50.61(b)(1). In order to meet this requirement, Virginia Electric and Power Company plans to submit a revision to WCAP 11015 by March 15, 1987. In the meantime, two affected pages from this report are attached. These tables present the material properties and the RTpts values appropriate for weld identification SA1526 which was used in weld seam L2 as shown in the tables. The RTpts values were determined by Westinghouse using methods identical to those used in WCAP 11015. For your information, RTpts values appropriate for forty years of operation (corresponding to a burnup of 7.4 EFPY as of September 1985 and operation with an assumed 80% capacity factor thereafter, a total of 28.8 EFPY) are presented for all of the materials in the beltline region of the vessel.

Fluence values used by Westinghouse to calculate the effect of the new weld are taken from WCAP 11015. Fluence values used to determine the RTpts values at 28.8 EFPY are contained in the Surry supplemental report transmitted in the November 26, 1986 letter (Serial No. 86-781). It is noted that Figure 3-1 in the November 26, 1986 letter does not reflect the RTpts values for weld identification SA1526. The other figures and tables in the report are not affected by this update.

Very truly yours,

for W. L. Stewart

Attachments
1.Surry Unit 1 Revised Material Properties Table
2.Surry Unit 1 Revised RTpts Table

cc: Dr. J. Nelson Grace
Regional Administrator
NRC Region II

Mr. W. E. Holland
NRC Senior Resident Inspector
Surry Power Station

Mr. Chandu P. Patel
NRC Surry Project Manager
PWR Project Directorate No. 2
Division of PWR Licensing-A

Table III.3-1

Surry Unit 1 Reactor Vessel
Beltline Region Material Properties

| | Cu (Wt%) | Ni (Wt%) | P (Wt%) | I (°F) | Source |
|---|---|---|---|---|---|
| Intermediate Shell Plate C4326-1 | 0.11 | 0.55 | 0.008 | 10[a] | Ref. [8] |
| Intermediate Shell Plate C4326-2 | 0.11 | 0.55 | 0.008 | 0[a] | Ref. [8] |
| Lower Shell Plate C4415-1 | 0.11 | 0.50 | 0.014 | 20[a] | Ref. [8] |
| Lower Shell Plate C4415-2 | 0.11 | 0.50 | 0.014 | 0[b] | Ref. [8] |
| Longitudinal Welds Intermediate & Lower Shells L1, L3, L4 Heat No. 8T1554, Linde 80, Flux 8579 | 0.18 | 0.63 | 0.014 | 0[b] | WOG Material Data Base BAW 1799 [9] |
| Longitudinal Weld Lower Shell L2 Heat No. 299L44, Linde 80, Flux 8596 | 0.35 | 0.67 | 0.014 | 0[b] | WOG Material Data Base |
| Circumferential Weld Intermediate to Lower Shell W05 Heat NO. 72445, Linde 80, Flux 8579/8632 | 0.21 | 0.58 | 0.016 | 0[b] | WOG Material Data Base |

Notes:

(a) The initial $RT_{NDT}$ value for this plate is estimated according to Branch Position MTEB 5-2 [11]

(b) The initial $RT_{NDT}$ values for the welds are the generic mean value defined by the PTS rule [1] for welds with Linde 80 flux

Table IV.1-1

$RT_{PTS}$ Values for Surry Unit 1

| Location | Vessel Material | $RT_{PTS}$ Values (°F) Present (7.4 EFPY) | End-of-License (25.6 EFPY) | End-of-License (28.8 EFPY) | Screening Criteria |
|---|---|---|---|---|---|
| 1 | Intermediate Shell Plate C4326-1 | 123 | 146 | 149 | 270 |
| 2 | Intermediate Shell Plate C4326-2 | 113 | 136 | 139 | 270 |
| 3 | Lower Shell Plate C4415-1 | 131 | 154 | 156 | 270 |
| 4 | Lower Shell Plate C4415-2 | 111 | 134 | 136 | 270 |
| 5 | Intermediate and Lower Shell Longitudinal Welds L1, L3, L4 | 131 | 157 | 160 | 270 |
| 6 | Intermediate to Lower Shell Circumferential Weld W05 | 195 | 244 | 249 | 300 |
| 7 | Lower Shell Longitudinal Weld L2 | 208 | 262 | 269 | 270 |