TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

July 14, 1980

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

PHIPPS BEND NUCLEAR PLANT - REPORTABLE DEFICIENCY - RPV SHROUD HEAD AND MOISTURE SEPARATOR ASSEMBLY FIRE (NCR PBNP-106)

Initial notification of the subject deficiency was made to R. W. Wright on June 13, 1980. In compliance with paragraph 50.55(e) of 10 CFR Part 50 we are enclosing the first interim report of the subject deficiency. TVA anticipates transmitting the final report on or before September 23, 1980. If you have any questions, please call Jim Domer at FTS 857-2014.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure
cc: Mr. Victor Stello, Jr., Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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PHIPPS BEND NUCLEAR PLANT UNIT 1
REACTOR PRESSURE VESSEL SHROUD HEAD AND
MOISTURE SEPARATOR ASSEMBLY FIRE
10 CFR PART 50.55(e) REPORT NO. 1 (INTERIM)
NCR PBNP-106

On June 13, 1980, TVA notified NRC-OIE, Region II, Inspector R. W. Wright, of a potentially reportable condition under 10 CFR Part 50.55(e) regarding a fire which was ignited in and around the Phipps Bend unit 1 reactor pressure vessel (RPV) shroud head and moisture separator assembly (MS assembly).

This is the first interim report on the subject reportable condition. A final report will be transmitted to you on or before September 23, 1980.

Description of Deficiency

In the process of shipping the Phipps Bend unit 1 vessel and RPV MS assembly to the site, personnel of the VSL Corporation, Los Gatos, California, (the hauling contractor) attempted to remove lugs near the RPV MS assembly shipping crate by arc air gouging and inadvertently ignited the shipping crate. The fire partially consumed the shipping crate and tarpaulin and burned and/or melted the polyethylene cover which was around the RPV MS assembly inside the crate.

The damage to the RPV MS assembly includes:

(a) Discoloration of the stainless steel due to smoke.
(b) Melted polyethylene adhering to the inside and outside surfaces of the steam separators.
(c) Possible halogen contamination as the fire was extinguished with chlorinated water.
(d) Possible material sensitization due to the heat generated from the fire.

The GE data package on the RPV MS assembly indicates that it is made of 304L stainless steel except for the bolting assemblies which are made of inconel and are on the periphery of the assembly. These materials would not be expected to exhibit sensitization or cracking problems due to the fire and subsequent contamination.

Corrective Action

TVA initially hydroblasted the RPV MS assembly with demineralized water.

TVA and GE metallurgists have examined the contaminated surfaces of the RPV MS assembly. They found the surface contamination of "free Halogens" to be low (less than the RDT 0.08 mg/dm^2 acceptance criteria). Random liquid penetrant examination of several of the moisture separator tubes which appeared to have the most severe (worst case) heat damage showed no indication of cracking. Also, in situ metallographic examination of two random worst case locations disclosed no evidence of sensitization in these areas.

TVA and GE removed three samples (two from the worst case locations and one from a clean area for comparison) for additional laboratory examination and tests by GE in their San Jose, California, laboratory.

TVA has recommended that the following steps be taken:

(a) The RPV MS assembly should be thoroughly cleaned using approved cleaning procedures.
(b) Areas from which samples were taken should have the rough edges smoothed and blended with surrounding metal (GE has indicated replacement of sampled areas is not necessary).
(c) Dimensional verification be performed.
(d) A verification check of the assembly should be made to ensure contaminants have been removed to an established acceptable level before acceptance for use.
(e) The MS assembly should be repackaged and protected from further damage.