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400 Chestnut Street Tower II

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December 4, 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:

HARTSVILLE NUCLEAR PLANT - REPORTABLE DEFICIENCY - INADEQUATE WEDGE
BOLT EXPANSION ANCHORS BY RAWPLUG (NCR HTN CDB 8002)

Initial notification of the subject deficiency was made to NRC-OIE,
Region II, Inspector R. W. Wright on November 6, 1980. In
compliance with paragraph 50.55(e) of 10 CFR Part 50, we are
enclosing the first interim report on the subject deficiency. We
consider 10 CFR Part 31 applicable to this nonconformance. TVA
anticipates transmitting the final report on or before March 25,
1981. If you have any questions regarding this matter, please call
Jim Demer at FTS 857-2014.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

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

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ENCLOSURE
HARTSVILLE NUCLEAR PLANT
INADEQUATE WEDGE BOLT EXPANSION ANCHORS BY RAWLPLUG
10CFR50.55(a) REPORT NO. (INTERIM)
NCR HTWCDE0002

On November 6, 1980, TVA District NRC-022, Region II, Inspector A. W. Wright, of a potentially reportable condition under 10 CFR Part 50.55(e) regarding inadequate wedge bolt expansion anchors supplied by the Rawlplug Company, Incorporated, New Rochelle, New York, for use at the Hartsville Nuclear Plant. This is the first interim report on the subject reportable condition. The final report will be submitted on or before March 25, 1981.

Description of Deficiency

TVA General Construction Specification No. G-32 for Bolt Anchors Set in Hardened Concrete requires qualification tests to be performed on wedge bolt expansion anchors (hereinafter referred to as anchors) before their initial use. The qualification tests on Rawl-Stud anchors manufactured by the Rawlplug Company were performed in 1978. The test results were acceptable, and the anchors were qualified. In recent qualification tests for another brand of anchors, all sizes of Rawl-Stud anchors were also tested for comparison with another brand. All sizes of Rawl-Stud anchors exceeded the qualification requirements except the one-inch, which developed only 75 percent of the required ultimate tensile capacity. Followup tests in in-place concrete were also unacceptable. Further investigation indicates that at some time since initial qualification, the manufacturer has made a design change to the wedging device on the anchor or the manufacturer's quality system is inadequate. These anchors are used to install safety-related, surface-mounted plates throughout the plant.

Interim Progress

Preliminary investigation indicates that the designer for STRIDE structures used a significantly lower allowable load for these anchors than the allowable load used to set the qualification load requirement in Specification G-32. The anchors installed in STRIDE structures apparently have an adequate factor of safety. TVA will verify the preliminary findings with the designer for STRIDE.

The design loads for the subject one-inch anchors will be reduced for their uses in TVA designs. Preliminary investigations indicate that few, if any, of the one-inch anchors have been installed in TVA-designed safety-related structures. TVA will review the designs utilizing the one-inch wedge bolt expansion anchors and will locate all of those already installed in TVA-designed safety-related structures.

Tennessee Valley Authority

PART 21 IDENTIFICATION NO. 80-324-000 COMPANY NAME Tennessee Valley Authority

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ACTION:

PRELIMINARY EVALUATION OF THE ATTACHED REPORT INDICATES LEAD RESPONSIBILITY FOR FOLLOWUP AS SHOWN BELOW:

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