

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

January 30, 1981

80-022-03L

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 - U.S. STEEL PIPE WITH
LINEAR INDICATIONS (NCR PBNP 154)

Initial notification of the subject deficiency was made to NCR-OIE Region II
Inspector R. W. Wright on October 3, 1980. TVA submitted the first interim
report on November 3, 1980. In compliance with paragraph 50.55(e) of 10 CFR
Part 50, we are enclosing the final report on the subject deficiency. We
consider 10 CFR Part 21 applicable to this nonconformance. If you have any
questions, please call Jim Domer at FTS 857-2014.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills
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
PHIPPS BOND NUCLEAR PLANT UNITS 1 AND 2
U.S. STEEL PIPE WITH LINEAR INDICATIONS
10CFR50.55(e) NCR PBNP-154
REPORT NO. 2 (FINAL)

Description of Deficiency

Three heats of seamless eight-inch Schedule 80 SA106B (heat Nos. L62448, L63651, and L63647) purchased from Guyon Alloys under contract to TVA had displayed linear surface defects and possible cracks. The largest linear indication was 10 feet in length; there was one crack which penetrated 80 percent of the pipe wall thickness.

Safety Implications

Cracked piping such as the one mentioned above could not reliably perform to meet design requirements, and therefore could possibly affect the safety of operation. Other linear indications previously referred to as "cracks" have been identified as external surface laps. The depth of these laps is actually less than 5 percent of the wall thickness. The laps could not affect normal operation or degrade the safety of plant operations.

Corrective Action

The material purchased under the provisions of contract No. 78KA3-822825 included ASME III Class 2 -8.675" o.d. Schedule 80 seamless SA106B pipe. The heat numbers in question were L62448 (575'-0"), L63651 (1852'-11"), and L63647 (626'-7"). The vendor responsible for supplying this material is Guyon Alloys, Incorporated, located in Harrison, New Jersey. The piping was fabricated by U. S. Steel, located in Loraine, Ohio.

Since the crack which had penetrated 80 percent of the wall thickness had been removed by grinding, TVA, Guyon, and U.S. Steel were unable to determine its cause. The pipe containing this crack has since been rejected. Inspection of the several other indications of concern revealed that there were no other cracks. The defects examined were actually laps which fell into the acceptable range in the context of SA106B.

A TVA review of piping of this size, class, and of the particular material in question reveals that surface linear defects such as laps and seams are both common and, in most cases, insignificant. However, in order to assure that the subject pipe meets the requirements for ASME SA-106 pipe, TVA will take the following steps:

1. Those surface imperfections (laps, seams) which intersect the weld must be removed to a distance of approximately four inches from the weld so that they do not interfere with subsequent inspection.
2. Those imperfections in 1. above which exceed one foot in length should be explored at two additional randomly selected locations.
3. Surface imperfections that penetrate more than 12 1/2 percent of the nominal wall thickness will result in the rejection of the pipe.
4. Any surface imperfection which is deeper than 5 percent of the nominal wall thickness shall be explored for its entire length and evaluated to 3. above.
5. All cracked piping will be rejected.
6. If at any time greater than 5% of a representative sample of a heat of pipe is rejectable, EN DES will be notified for further disposition.

TVA Construction Specification G29M was revised to clarify this area of concern. Process Specification 3.M.5.1, paragraph 5.0, in G29M will be clarified in a future revision to enable site personnel to more readily deal with similar defects in both this and other materials.