

B 3/29/78

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50-4387439

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DOC DATE: 03/21/78
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DOCTYPE: LETTER NOTARIZED: NO
SUBJECT:

COPIES RECEIVED
LTR 1 ENCL 1

FURNISHING FINAL CONSTRUCTION DEFICIENCY REPT CONCERNING DEFECTIVE PIPE
FABRICATED BY ALLEGHENY LUDLUM STEEL CORP... W/ENCL.

PLANT NAME: BELLEFONTE - UNIT 1
BELLEFONTE - UNIT 2

REVIEWER INITIAL: XJM
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***** DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS *****

CONSTRUCTION DEFICIENCY REPORT (10CFR50.55(E)).
(DISTRIBUTION CODE B004)

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EXTERNAL: LPDR'S
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TIC**W/ENCL
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ACRS CAT B**W/16 LTRS

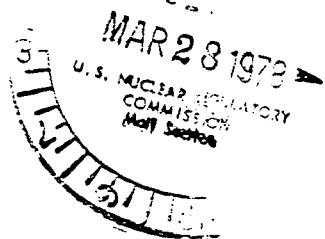
DISTRIBUTION: LTR 40 ENCL 28
SIZE: 1F+3F

CONTROL NBR: 780880010

***** THE END *****

MAR 21 1978

50-438/439



Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 1217
230 Peachtree Street, NW.
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - DEFECTIVE PIPE FABRICATED BY
ALLEGHENY LUDLUM STEEL CORPORATION - NCR 670

On November 25, 1977, L. E. Foster, NRC-OIE Principal Inspector, was informed that the subject nonconformance was determined to be reportable in accordance with 10 CFR 50.55(a). This was followed by our interim report dated December 19, 1977. Enclosed is the final written report.

Very truly yours,

J. E. Gilleland
Assistant Manager of Power

Enclosure

cc: Dr. Ernst Volgenau, Director (Enclosure) ✓
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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BELLEFONTE NUCLEAR PLANT UNIT 1
FINAL REPORT NCR NO. 670
DEFECTIVE PIPE FABRICATED
BY ALLEGHENY LUDLUM STEEL CORPORATION

Description of Condition

During installation of piping in the Waste Disposal System and Chemical Addition and Boron Recovery System, severe extrusion defects were discovered on the internal surface of portions of the piping. The fabricator of the defective piping was Allegheny Ludlum Steel Corporation (ALSC) and supplied to TVA on contract with National Valve Manufacturing Company (NAVCO). The extrusion defects were found in heat 0-1603. This heat was placed in nonconformed status. A second heat, heat 0-1696, was found to have also been fabricated by ALSC. This heat was not nonconformed but was placed in questionable status for possible manufacturer defects.

The total amount of 2-inch stainless steel pipe, ASME Section III-Class 2 and 3, supplied by NAVCO from Allegheny Ludlum Steel Corporation is 3319 feet. This piping was fabricated from heat numbers 0-1603 and 0-1696. In addition, NAVCO supplied 7371 feet of 2-inch stainless steel ANSI B31.1 pipe manufactured by Allegheny Ludlum from the same heat numbers. Details of the amount of pipe by heat numbers in each code classification and its present location are shown on Attachment A.

Of 40 randomly selected lengths (approximately 840 feet) examined from heat 0-1696, none were found to have defects. This indicates the deficiency does not affect heat 0-1696. Of 44 randomly selected lengths (approximately 925 feet) of ASME Code piping examined from heat 0-1603, 2 lengths were found to have internal defects. This indicates the defects are the results of a single isolated incident of a momentary fabrication error.

Safety Implications Statement

The deficiency, had it gone uncorrected, would have resulted in defective piping being installed in the Waste Disposal System (WDS) and the Chemical Addition and Boron Recovery System (CA & BRS). As described above, indications are that the deficiency involved only heat 0-1603 and was the result of a single fabrication error. However, for this analysis it is assumed defective piping was installed in the Code applications of the WDS and CA & BRS. The piping would have been used for equipment drainage of radioactive fluids. A rupture of one of these lines would spill radioactive fluid onto the Auxiliary Building floor which would drain to the Auxiliary Building Station Drainage System. The drains in the Auxiliary Building in the area of the WDS and the CA & BRS are considered potentially radioactive and are routed for treatment appropriately. Therefore no spillage could escape to the environment. Radiation

monitors are available to alert plant personnel to any area contamination. Ventilation systems are designed to continuously filter the Auxiliary Building atmosphere thus preventing radiation from escaping to the environment. Therefore, any spillage would not have adversely affected safe operation of the plant.

The embedded piping does not have a safety function. Therefore the deficiency, had it gone uncorrected, would not have adversely affected the safe operation of the plant.

Corrective Action

The corrective action is as follows:

1. All pipe, ASME and ANSI, with heat number 0-1603 has been tagged and segregated to prevent further installation.
2. The 152 feet of ASME Section III-Class 3 code pipe, heat number 0-1603, which has been installed in the Waste Disposal System and in the Chemical Addition and Boron Recovery System has been inspected externally. No indication of defects were found. This pipe will be removed and internally inspected.
3. The defective lengths of heat number 0-1603, ASME and ANSI, will be rejected for use on permanent material and returned to vendor.
4. The remaining lengths of heat number 0-1603, ASME Section III, shall be downgraded and used in ANSI B-31.1 systems.
5. Individual inspections of each length of heat number 0-1696 will be conducted before installation.

ATTACHMENT A

Tabulation of 2-inch stainless steel pipe, ASTM 312T304, heat number 0-1603 and 0-1696, manufactured by Allegheny Ludlum Steel Corp.

	ASME CL III-2		ASME CL III-3		ANSI B31.1	
	01603	01696	01603	01696	01603	01696
Total Received	184 (ft)		3135 (ft)		7371 (ft)	
Warehouse and Field Storage	42	0	942	839	1845	1030
Installed in Waste Disposal System			97	93	370	335
Installed in CA & BR System			55	340		
Used for Bending Qualifications			21	41		
Installed in Non-Code Systems*	142		707		3791	

*These quantities represent the maximum amount installed in non-code systems. The actual figures depend on the amount of scrap, rejected bends, etc.