

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

November 9, 1982

02 NOV 15 AS: 29
U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - RESPONSE TO VIOLATION
50-438,50-439/82-24-01 - TEMPERATURE RATING OF VALVES

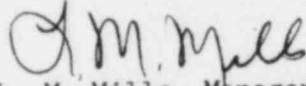
This is in response to D. M. Verrelli's letter dated September 10, 1982, report numbers 50-438/82-24, 50-439/82-24, concerning activities at the Bellefonte Nuclear Plant which appeared to have been in violation of NRC regulations. The response to this violation has been delayed. This delay and request for extension was communicated to D. Quick (NRC-OIE RII) by telephone on October 12, 1982. Enclosed is our response to the citation.

If you have any questions concerning this matter, please get in touch with R. H. Shell at FTS 858-2688.

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


L. M. Mills, Manager
Nuclear Licensing

Enclosure

cc: Mr. Richard C. DeYoung, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 RESPONSE TO SEVERITY LEVEL IV VIOLATION 50-438,50-439/82-24-01 TEMPERATURE RATING OF VALVES

Description of Deficiency

10 CFR 50, Appendix B, Criterion V, as implemented by Bellefonte FSAR Section 17, Paragraph 17.1A.5 requires that activities affecting quality be accomplished in accordance with instructions, procedures, or drawings.

TVA's Design Criteria Sheets 3AW 0678-N3-01 R3, -02 R4, -03 R5, -04 R3, -05 R4 and -06 R3 specify the design temperature/pressure of the chemical addition and boron recovery system. The maximum design temperature for this system is 200°F.

Contrary to the above, between July 12-16, 1982, the resident inspector identified numerous valves in the chemical addition and boron recovery system with "N" stamps specifying 150°F as the maximum temperature rating for these valves.

Admission or Denial of the Alleged Violation

TVA denies the alleged violation.

The 150°F listed on the nameplate is not the maximum temperature rating for these valves.

Paragraph NA-8220 of the 1974 Code, ASME Section III, Division 1, up to and including the Winter 1975 Addenda, specified that the nameplate for nuclear items had to be stamped with the applicable official N-type symbol, the code class, the manufacturer's or installer's name, the design pressure at coincident temperature, the manufacturer's serial number and the year built.

Valves procured during this time period could be bought (for Class 2 and 3 applications) under the provisions of NC/ND-3511, Standard Design Rules, to the applicable requirements of ANSI B16.5. Table NC/ND-3691-1 specified that the reference document was ANSI B16.5-1968. This standard specifies in paragraph 4.1 that valves would be marked in accordance with MSS (Manufacturer's Standardization Society of the Valve and Fittings Industry) SP-25 (Standard Practice Number 25). The SP requires valves to be marked with the manufacturer's name or trade mark, material, pressure (the primary service pressure for which the product is designated--such as 600 pound) and size.

The primary service pressure rating designates a family of pressures which are guaranteed for a table of increasing temperatures. Although intended for 150 pound class, ITT Grinnell did not at that time mark the bodies with 150 pound. Today's valves are marked Class 150.

For the valves in question, the design pressure listed in the valve data sheets were 150 pounds per square inch (psi) and 195 psi; the temperatures associated with these pressures were, in both cases, 200°F. These are called design temperatures in the ASME Code. The design temperature (not necessarily coincident with the design pressure) is defined as the highest mean metal temperature through the thickness expected under operating conditions (generally the normal condition).

The use of 255 psi at 150°F was ITT Grinnell's standard practice and covered the majority of applications for their elastomer diaphragm valves. These valves have a temperature use limit of 300°F, based on the composition of the diaphragm. However, the valves meet the requirements of Class 150, ANSI B16.5-1968, and from the pressure-temperature ratings for 150 pounds, at 200°F the valves are good for 240 psi.

This marking requirement has created much confusion in code documentation for items which were fully acceptable for the intended service. To avoid further problems, the ASME Code, in the Winter 1977 Addenda changed the nameplate markings by deleting the year built, and the design pressure at coincident temperature marking requirements (See paragraph NCA-8220). Unfortunately the Figure NCA-8321-1 did not get corrected at the same time. When it was corrected by errata in the Winter 1978 Addenda, the Design Pressure line was still shown, and it still was so shown in the 1980 Edition. It was finally corrected in the Summer 81 Addenda rewrite of NCA-8000. The class for line valves is required to be indicated on the nameplate, and recent valves have been received properly marked.

TVA therefore will leave the nameplates "as is", because the valves do meet the applicable codes and replacing them, or grinding off year built or Design Pressure at coincident temperature would not improve quality and would result in unnecessary expenditure of many craft hours.