

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

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October 25 1984

BLRD-50-438/83-13

BLRD-50-439/83-09

U.S. Nuclear Regulatory Commission  
Region II

Attn: Mr. James P. O'Reilly, Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

Dear Mr. O'Reilly:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - IMPROPERLY QUALIFIED NOZZLE LOADS  
- BLRD-50-438/83-13, BLRD-50-439/83-09 - THIRD INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector D. Verrelli on January 24, 1983 in accordance with 10 CFR 50.55(e) as NCR BLN CEB 8220. This was followed by our interim reports dated February 16 and April 27, 1983. Enclosed is our third interim report. We expect to submit our next report by August 23, 1985. Please note that in our previous reports, we inadvertently omitted the fact that 10 CFR Part 21 is also applicable to this deficiency. A several-day delay of this submittal was discussed with Inspector S. Weise on October 19, 1984.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*DS Kammer*

*for* 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

Records Center (Enclosure)  
Institute of Nuclear Power Operations  
1100 Circle 75 Parkway, Suite 1500  
Atlanta, Georgia 30339

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ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2  
IMPROPERLY QUALIFIED NOZZLE LOADS  
BLRD-50-438/83-13, BLRD-50-439/83-09  
NCR BLN CEB 8220  
10 CFR 50.55(e)  
THIRD INTERIM REPORT

Description of Deficiency

The original issue of Nonconformance Report (NCR) BLN CEB 8220 identified six piping analysis problems done by Teledyne Engineering Services of Waltham, Massachusetts, which were issued using improperly qualified nozzle loads. Typically for these type problems, evaluations are made for normal, upset and faulted conditions. However, in these six problems, only the faulted condition was evaluated.

The revision of this NCR expands its scope to include piping analysis problems done by PMB Systems Engineering Incorporated of San Francisco, California, and by TVA analysis. This revision also categorizes the erroneous analysis by cause of the error such that there are two distinct groups: those caused by use of improper references to obtain allowable nozzle loads and those caused by a failure to follow procedures for obtaining nozzle loads.

An example of the use of an improper reference is found in analysis problem N4-1NV-F on the Makeup and Purification (MU/P) System. In this problem concerning qualification of the makeup pump discharge nozzle, the Babcock and Wilcox (B&W) specification 08-113000005-06 was used but this specification applies only to the reactor building spray pumps.

Examples of failure to follow procedures for obtaining nozzle loads are problems listed in the original version of this NCR (N4-1ND-A, N4-2ND-A, N4-1ND-B, N4-2ND-B, N4-1NV-A, N4-1(2)NV-M) on the Decay Heat Removal and MU/P Systems which qualified the equipment nozzles for the faulted condition only. Another example is found in problem N4-2KC-D on the Component Cooling Water System where normal, upset, and faulted conditions were evaluated but the required factors needed to obtain the normal, upset and faulted condition nozzle allowables were not used.

Interim Progress

TVA has completed its initial investigation of all affected problems, has identified all the deficient problems, and is in the process of correcting the deficiencies.

To prevent a recurrence of this deficiency, the Bellefonte Rigorous Piping Analysis Handbook has been revised to give specific instructions for equipment nozzle qualification, and TVA and Gilbert/Commonwealth Associates personnel have been given instructional classes in proper equipment nozzle qualification. (Gilbert/Commonwealth has been contracted to do analysis for Bellefonte. The contracts for Teledyne and PMB have expired.) New TVA employees as well as Impell contract personnel (who will also be working on Bellefonte analysis) are to attend the instructional classes in proper equipment nozzle qualification.