

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

April 12, 1982. 43

BLRD-50-438/81-59

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 UNIT 1 - EXCESSIVE PIPE AND SUPPORT VIBRATION
DURING EQUIPMENT OPERATION - BLRD-50-438/81-59 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
R. V. Crlenjak on September 15, 1981 in accordance with 10 CFR 50.55(e) as
NCR 1572. This was followed by our first interim report dated October 15,
1981. Enclosed is our final report.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

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

OFFICIAL COPY

8204280238

S

IE 27
5
11

ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNIT 1
EXCESSIVE PIPE AND SUPPORT VIBRATION DURING EQUIPMENT OPERATION
NCR 1572
BLRD-50-438/81-59
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

During operation of compressor 1RJ-MCMP-001-A, system piping and pipe support 1RK-MPHG-0093 vibrated excessively when the compressor was running in the half-load condition. Movement was approximately 1 inch in each direction. Investigation revealed that the aftercooler bypass line isolation valve was in the partially open position. Subsequent operation of the system with the bypass line isolation valve closed and in various partially open positions failed to reproduce the excessive vibration. No direct cause and effect relationship could be established.

Safety Implications

Failure of Essential Air System piping would result in system pressure loss. Loss of pressure in the train A compressor would result in closure of all train A isolation valves. Closure of the isolation valves would result in a reactor trip, as well as a loss of train A valves in the Decay Heat Removal (DHR) System. The ability of the DHR System to sustain a single active failure would then be impaired, thereby adversely affecting plant safety.

Corrective Action

A revised seismic analysis of the piping was already in process and has been issued. Following design and installation of new supports, the air system will undergo preoperational testing to verify satisfactory operation of the system. Vibration testing will be conducted during preoperational test PT-RK-01 for this system and will provide final verification that system vibrations are within acceptable limits.

This condition is an isolated occurrence that does not require means to be taken to prevent a recurrence. No other TVA nuclear plants are affected.