

USNRC REGION II
ATLANTA, GEORGIA

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

USNRC REGION II
ATLANTA, GEORGIA

83 AUG 2 A10:26

July 29, 1983

83 AUG 2 A10:02

BLRD-50-438/83-11

U.S. Nuclear Regulatory Commission
Region II

Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

BELLEFONTE NUCLEAR PLANT UNIT 1 - GENERAL ELECTRIC MOTORS EXCEED RATED LOAD
- BLRD-50-438/83-11 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
P. E. Fredrickson on January 10, 1983 in accordance with 10 CFR 50.55(e) as
NCR 1976. This was followed by our interim report on February 8, 1983.
Enclosed is our final report.

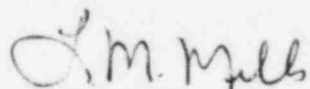
In our previous report TVA had stated that the premature motor failures
documented in NCRs 2102 and 2285 (BLRD-50-438/83-02) may have been due to long-
term overload. However, investigation has shown that the premature failures
were not caused by this condition as there was insufficient evidence of
overheating of the entire winding. Also, the failures were located in either
the top coil in the stator slot at the end, or the stator core, which suggests
that the failures could not have been primarily caused by the motor overheating
due to the plugged air passages in the stator. Consequently, TVA no longer
considers NCRs 2102 and 2285 related to NCR 1976.

TVA does not now consider the subject nonconforming condition adverse to the
safe operation of the plant. Therefore, we will amend our records to delete the
subject nonconformance as a 10 CFR 50.55(e) item.

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

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

cc: See page 2

U.S. Nuclear Regulatory Commission

July 29, 1983

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

ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNIT 1
GENERAL ELECTRIC MOTORS EXCEED RATED LOAD
BLRD-50-438/83-11
NCR 1976
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

Current readings taken on two 150 hp General Electric (GE) induction motors supplied by Ingersoll Rand (I-R), Chamblee, Georgia, exceeded their nameplate value of 195 amperes. The increased current could be partially attributed to TVA operating the compressors at a discharge pressure of 110 lb/in² instead of the 100 lb/in² originally specified in the contract.

Safety Implications

As specified in TVA contract 76K31-86849, the subject motors were to be operated at 100 lb/in² g and 720 scfm air delivery. After the compressors were delivered TVA requested that the operating pressure be increased to 110 lb/in² g. Subsequently, I-R agreed to reset the compressor safety valves for proper operation at the increased discharge pressure. Measurements were taken in the field which have shown that at the design conditions of 720 scfm and a discharge pressure of 100 lb/in² g, the compressors required 149.88 hp from the 150 hp motor instead of the 140 hp value provided to TVA by I-R. Operation at the increased discharge pressure requires the motor to operate at approximately 110 percent of the nameplate rating. However, the subject motors are capable of electrical operation at 115 percent of the nameplate rating on a continuous basis.

Although the motors are capable of continuous operation at the increased pressure of 110 lb/in², TVA will replace the existing motors (under engineering change notice (ECN) 1916) with motors that meet the present quality assurance and environmental qualification requirements. The specification for the replacement motors will not allow continuous operation within the service factor horsepower range which will ensure that the current required by the motor will not exceed the value shown on the motor nameplate during normal operation.

Inasmuch as the subject motors are capable of electrical operation at 115 percent of the nameplate horsepower rating on a continuous basis it is our conclusion that there are no conditions adverse to the safe operation of the plant concerning this specific deficiency, and we no longer consider 10 CFR 50.55(e) applicable.