

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

September 23, 1983

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WBRD-50-390/82-61  
WBRD-50-391/82-58

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:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - DIESEL GENERATOR ELECTRICAL EQUIPMENT  
TEMPERATURE RATING - WBRD-50-390/82-61, WBRD-50-391/82-58 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector  
R. V. Crlenjak on June 1, 1982 in accordance with 10 CFR 50.55(e) as NCR WBN NEB  
8212. Interim reports were submitted on July 1 and November 1, 1982 and  
January 19 and June 17, 1983. Enclosed is our final report.

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*  
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

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
DIESEL GENERATOR ELECTRICAL EQUIPMENT TEMPERATURE RATING  
NCR WBN NEB 8212  
WBRD-50-390/82-61, WBRD-50-391/82-58  
10 CFR 50.55(e)  
FINAL REPORT

### Description of Deficiency

The diesel generator (DG) electrical equipment was purchased to meet a maximum temperature requirement of 110°F. With the diesels operating on hot summer days, the average room temperature could reach 120°F. This deficiency was discovered during a design review of the equipment. The cause is attributed to the fact that the environmental conditions of all areas of the plant containing safety-related equipment had not been established at the time of equipment procurement. This condition exists for all four diesels at the plant.

### Safety Implications

Excessive temperatures in the vicinity of the DG electrical equipment could jeopardize the operation of the diesels and other equipment in the room. This could adversely affect the safe shutdown of the plant in the event of a loss of offsite power.

### Corrective Action

TVA has issued engineering change notice (ECN) 3898 for the four DG rooms. This ECN will incorporate design changes which will assure that the DG building ventilation systems can maintain acceptable temperatures (below 110°F) in the vicinity of the electrical equipment. The following changes will be made:

1. The two existing diesel engine room exhaust fans will run concurrently to cool each engine room when required by outside air temperatures.
2. A new supply fan, called the diesel generator and electrical panel cooling fan, and associated ductwork will be added to each diesel engine room. Air supplied from these fans will be used to help cool the electrical panels.
3. The same signal which starts the exhaust fans will also start the generator and electrical panel cooling fans.

To prevent recurrence of this deficiency, TVA's Division of Engineering Design (EN DES) has established environmental conditions for all plant areas containing safety-related equipment. These environmental conditions were established in accordance with NUREG-0588.

All design work will be completed by November 7, 1983, for ECN 3898. All construction modification work will be completed by May 1, 1984, which is after unit 1 fuel loading. This is acceptable because excessive room temperatures do not occur, with the system in its present configuration, until the outside air temperature exceeds 86°F. Outside air temperatures above 86°F do not occur, statistically at the site, until after May 1.