

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

USNRC-DS

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WBRD-50-390/87-17
WBRD-50-391/87-19

10 CFR 50.55(e)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

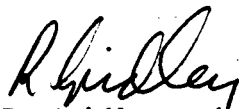
WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - DIESEL GENERATOR
GOVERNOR/ACTIVATOR ELECTRICAL CONNECTOR RECEPTACLES CONTAMINATED WITH OIL -
WBRD-50-390/87-17 AND WBRD-50-391/87-19 - FINAL REPORT

The subject deficiency was initially reported to NRC Region II Inspector
Gordon Hunegs on September 16, 1987, in accordance with 10 CFR 50.55(e) as
CAQR WBP 870132. Enclosed is our final report.

If there are any questions, please telephone R. D. Schulz at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


R. Gridley, Director
Nuclear Licensing and
Regulatory Affairs

Enclosure
cc: See page 2

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U.S. Nuclear Regulatory Commission

OCT 15 1987

cc (Enclosure):

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ENCLOSURE

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2
DIESEL GENERATOR GOVERNOR/ACTUATOR ELECTRICAL
CONNECTOR RECEPTACLES CONTAMINATED WITH OIL
WBRD-50-390/87-17 AND WBRD-50-391/87-19
CAQR WBP 870132
10 CFR 50.55(e)

FINAL REPORT

Description of Conditions

As a result of a concern at Sequoyah Nuclear Plant, an investigation was made into the possibility of WBN standby diesel generator governor/actuator electrical connector receptacles being contaminated with governor oil. It was found that 9 out of the 10 connector receptacles had evidence of oil contamination. WBN used Woodward EGB-13P governor/actuators with Amphenol MS-3102A connectors and MS-3106A mating plugs for its diesel generator sets.

Because maintenance personnel were unaware of the potential for this problem, sufficient care was not taken during governor oil refilling operations. The governor oil filler spouts are located directly above the electrical connectors. If proper care is not taken during oil refillings, oil will flow over the internal wiring of the governor and migrate into the connectors.

Safety Implications

The presence of oil in the electrical connector receptacles introduces a dielectric between the male-female contacts. This could result in an open circuit in various electrical control circuits that could cause the diesel generator to not perform its design function. The discovery of similar contamination on 9 out of 10 WBN diesel engines indicates the possibility of concurrent failure that could lead to a total loss of the onsite alternating current emergency power, which would adversely affect the safe operation of the plant.

Corrective Actions

All 10 connections were inspected for possible contamination with 9 found contaminated. Maintenance Request No. A-620603 was written to reinspect and clean the connectors. To prevent recurrence, TVA will revise Maintenance Instruction 82.1, "Diesel Generator-Monthly, Quarterly, and Six-Month Inspections," to specify refilling the governor oil with the use of a nonmetallic spout, which will extend past the connector. The connector is then removed to inspect for contamination and cleaned if necessary. A quality control holdpoint will be added to verify proper refilling, connector inspection, and any necessary cleaning. Corrective actions will be completed by January 31, 1988.