

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 "ha" ut Street Tower II

December 8, 1983

WBRD-50-390/83-64

WBRD-50-391/83-59

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 - AIR FLOW RATES FOR SAFETY-RELATED ROOM
EXHAUST FANS BELOW ACCEPTANCE CRITERIA WBRD-50-390/83-64, WBRD-50-391/83-59 -
FIRST INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
Ross Butcher on November 7, 1983 in accordance with 10 CFR 50.55(e) as NCRs WBN
NEB 8329 and NEB 8330. Enclosed is our first interim report. We expect to
submit our next report on or about January 18, 1984.

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

8312160184 831208
PDR ADOCK 05000390
S PDR

OFFICIAL COPY

1127

111

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
AIR FLOW RATES FOR SAFETY-RELATED ROOM EXHAUST FANS
BELOW ACCEPTANCE CRITERIA
NCRs WBN NEB 8329 AND NEB 8330
WBRD-50-390/83-64, WBRD-50-391/83-59
10 CFR 50.55(e)
FIRST INTERIM REPORT

Description of Deficiency

Special testing of the diesel generator (DG) room exhaust fans, performed by TVA to resolve a preoperational test deficiency (PT-88), has shown air flow rates to be below design acceptance criteria on five out of the eight fans. TVA's testing had previously verified acceptable fan air flow rates and no further testing was planned. These low air flow rates for the DG room exhaust fans were identified in NCR WBN NEB 8329.

To evaluate generic implications to other HVAC areas, additional special tests were performed by TVA. This additional testing indicates air flow rates for three out of the four DG building electrical board room exhaust fans to be unacceptable. (The acceptable air flow rate on fans 2BB was clouded by a substantially higher fan rev/min than was recorded for the CONST G-37 test and a testing interruption due to the 2BB fan motor tripping on thermal overload.) Also, the control building battery room exhaust fans A-A and B-B were tested and fan A-A failed to meet acceptance criteria. Unacceptable air flow rates in these two areas were then nonconformed by NCR WBN NEB 8330. Table 1 (attached) identifies the specific exhaust fans and air flows involved.

Interim Progress

Due to design changes needed to correct problems separately reported under NCR WBN NEB 8214 (WBRD-50-390,391/82-82,78), both fans in each DG room will run concurrently and the combined air flows of these fans would be sufficient to provide adequate cooling. (The acceptance criteria used in the most recent flow tests were based on the use of a single fan.) Even so, TVA is planning to increase the DG exhaust fan speeds from 540 rev/min to approximately 625 rev/min in order to increase individual fan air flows. No additional corrective action on NCR WBN NEB 8329 is planned.

TVA is still in the process of determining the corrective action of WBN NEB 8330, and it is continuing its investigation of the cause of the test result discrepancies, the generic implications of these discrepancies (with regard to other safety-related areas of WBN), and the actions that will be required to prevent recurrence.

TABLE 1
Exhaust Fan Air Flow Rates

| <u>Fan</u> | <u>Location</u> | <u>Design Flow Required (+ 10%)</u> | <u>NUC PR Tests Results</u> | <u>Status</u> |
|------------------|--------------------|---|---------------------------------|---------------|
| NCR WBN NEB 8329 | | | | |
| 2B | DG room 1B-B | 45,000 cfm | 37,835 cfm | unacceptable |
| 1B | DG room 1B-B | 45,000 cfm | 38,010 cfm | unacceptable |
| 2B | DG room 2B-B | 45,000 cfm | 34,645 cfm | unacceptable |
| 1B | DG room 2B-B | 45,000 cfm | 36,590 cfm | unacceptable |
| 1A | DG room 1A-A | 45,000 cfm | 40,635 cfm | acceptable |
| 2A | DG room 1A-A | 45,000 cfm | 41,345 cfm | acceptable |
| 1A | DG room 2A-A | 45,000 cfm | 41,250 cfm | acceptable |
| 2A | DG room 2A-A | 45,000 cfm | 37,355 cfm | unacceptable |
| NCR WBN NEB 8330 | | | | |
| 1B | DG elec bd rm 1B-B | 3,500 cfm | 3,087 cfm | unacceptable |
| 2B | DG elec bd rm 2B-B | 3,500 cfm | 3,588 cfm | *acceptable |
| 1A | DG elec bd rm 1A-A | 3,500 cfm | 2,419 cfm | unacceptable |
| 2A | DG elec bd rm 2A-A | 3,500 cfm | 2,868 cfm | unacceptable |
| A-A | Con bldg batt room | 2,200 cfm | 1,840 cfm | unacceptable |
| B-B | Con bldg batt room | 2,200 cfm | 2,027 cfm | acceptable |

*The acceptable air flow rate was clouded by a substantially higher fan rev/min and a testing interruption due to fan 2BBs motor tripping on thermal overload.