

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

August 3, 1984

BLRD-50-438/84-15  
BLRD-50-439/84-14

U.S. Nuclear Regulatory Commission  
Region II  
Attn: Mr. James P. O'Reilly, Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

Dear Mr. O'Reilly:

BELLEVILLE NUCLEAR PLANT UNITS 1 AND 2 - LOOSE DRIVE HUBS ON OVERSPEED  
GOVERNOR DRIVE SHAFT ON DELAVAL DIESELS -BLRD-50-438/84-15,  
BLRD-50-439/84-14 - FINAL REPORT

The subject deficiency was initially reported to NRC-DIE Inspector  
P. E. Fredrickson February 3, 1984 in accordance with 10 CFR 50.55(e) as  
NCR BLN MEB 8401. This was followed by our interim report dated March 1,  
1984. Enclosed is our final report. We consider 10 CFR Part 21 applicable  
to this deficiency.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*DS Kammer*

for 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

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2  
LOOSE DRIVE HUBS ON OVERSPEED GOVERNOR DRIVE SHAFT ON DELAVAL DIESELS  
BLRD-50-438/84-15, BLRD-50-439/84-14  
NCR BLN MEB 8401  
10 CFR 50.55(e)  
FINAL REPORT

Description of Deficiency

Recently, on a non-nuclear commercial engine installation, Transamerica Delaval, Incorporated (TDI), of Oakland, California, discovered the flexible coupling drive hubs were loose on the shafts in the overspeed governor fuel transfer pump drive. This design has been used for many years and similar problems have not been reported. These hubs are manufactured by Lovejoy Coupling and installed by TDI.

In accordance with the requirements of 10 CFR 21, TDI notified the NRC of this potential defect in a component of a DSR or DSRV standby diesel generator in their letter to the Director of the Office of Inspection and Enforcement dated January 9, 1984.

The root cause of the condition is that TDI's design and manufacturing procedures were inadequate thus allowing for the possibility of the couplings coming loose after operation.

Safety Implications

If the overspeed governor stops turning, an alarm occurs but the engine will continue to operate.

If the fuel transfer pump stops turning, the engine will not operate unless there is an auxiliary fuel transfer pump driven by an external source. TVA's diesels have no auxiliary pumps.

This potential problem with the overspeed governor and fuel transfer pump drive could result in engine nonavailability which would have adverse effects on the plant's ability to attain a safe shutdown condition during a loss of offsite power event.

Corrective Action

The hubs have been inspected for looseness by removing the inspection covers and the overspeed drive. The hubs have been checked for fit by removing the pin and key set screw. The hubs were found to be acceptable. This inspection was accomplished per TDI Service Information Memorandum (SIM) No. 363.