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PSNH PUBLIC SERVICE
Company of New Hampshire

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September 20, 1982

SBN-326
T.F. Q 2.2.2

United States Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

Attention: Mr. Richard W. Starostecki, Director
Division of Resident and Project Inspection

References: (a) Construction Permit CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444
(b) Telecon of August 20, 1982, J. DeVincentis (YAEC) to Walter Baunack (NRC Region I)

Subject: Final 10CFR50.55(e) Report; Misapplication of Torquing Equipment by Beloit Power Systems

Dear Sir:

On August 20, 1982, a reportable 10CFR50.55(e) item was reported [Reference (b)] regarding the possible misapplication of torquing equipment on the diesel generator shaft to rotor spider fastener. This item was formally reported to the NRC by Beloit Power Systems (BPS) by letter dated April 23, 1982.

The following information is provided per 10CFR50.55(e)(3) and is considered to be the final report on this item.

DESCRIPTION OF DEFICIENCY

Diesel generator sets manufactured with a Colt engine and BPS generators (frame size IX only) may have a loose stud/nut combination on the shaft spider assembly. There are fourteen 3" studs with hex nuts to secure the generator shaft spider to the rotor. The bolts were to be tightened to 4000 ft. lbs. torque by BPS. On a D-G set for another project, Colt performed a recheck of torque values to verify operation of torquing equipment used in the shop. It was found that one bolt was not loaded at all, and three other bolts were only about thirteen percent tight. BPS had provided Colt with documentation indicating that bolting had been tightened per shop specifications. This indicates a possible misapplication of torquing equipment.

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ANALYSIS OF SAFETY IMPLICATIONS

Improper torquing of subject bolting may result in excessive and undesirable vibration of the generator shaft. Also, operating vibrations and load cycling may result in further loosening of improperly tightened bolts. These conditions, if undetected and/or corrected, could render the D-G set inoperable.

CORRECTIVE ACTIONS

BPS has established a test plan for shop equipment to determine if an equipment or procedure problem exists. BPS has also provided notification to end users of D-G sets in question via Mailgram dated 4/22/82 (VU-28221). This notification included a preliminary corrective procedure to preclude any problems.

BPS has submitted a formal Colt procedure (11876749; FP 23204) by letter of 6/30/82 (VU-29801) which has been issued for record distribution and field action by UE&C letter of 7/29/82 (SBU-59276; FM 21532). Per this procedure, the final torque value has been increased to 5000 ft. lbs. The completion and results of this corrective procedure are to be reported back to Colt/BPS for confirmation and record of new torque values.

ANALYSIS AND EVALUATION

The corrective procedure provided by BPS/Colt will preclude potential problems resulting from possible misapplication of torquing equipment in the shop. The higher final torque values to be used will further reduce the potential of loosening the bolts under operating vibration and load cycling.

All of the Seabrook D-G sets were shop tested prior to shipment, with no indication of the problems noted above. Further testing is to be done on site per established pre-operational startup, and inservice operations. Even if the corrective procedure provided by BPS is not followed, it is expected that, if this deficiency existed, it would be detected long before a possible D-G failure could occur. However, application of the corrective procedure will fully eliminate this potential problem.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

J. DeVincentis
Project Manager

ALL/dd