



Public Service of New Hampshire

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September 9, 1983

SBN-559  
T.F. Q2.2.2

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

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

References: (a) Construction Permit CPPR-135 and CPPR-136, Docket  
Nos. 50-443 and 50-444  
(b) Telecon of March 1, 1983, A. L. Legendre (YAEC) to  
Richard W. Starostecki (NRC Region I)  
(c) Telecon of March 3, 1983, A. L. Legendre (YAEC) to  
Ed Greenman (NRC Region I)  
(d) PSNH Letter, dated March 29, 1983, "Interim 10CFR50.55(e)  
Report; Cooling Tower Wall/Concrete Beam Transverse Shear  
Stress," J. DeVincentis to R. W. Starostecki  
(e) PSNH Letter, dated July 15, 1983, "Interim 10CFR50.55(e)  
Report; Cooling Tower Wall/Concrete Beam Transverse Shear  
Stress," J. DeVincentis to R. W. Starostecki  
(f) PSNH Letter, dated August 16, 1983, "Interim 10CFR50.55(e)  
Report; Cooling Tower Wall/Concrete Beam Transverse Shear  
Stress," J. DeVincentis to R. W. Starostecki

Subject: Final 10CFR50.55(e) Report; Cooling Tower Wall/Concrete Beam  
Transverse Shear Stress

Dear Sir:

In References (d), (e), and (f), we filed Interim 10CFR50.55(e) Reports  
regarding the structural design deficiency affecting certain walls and  
concrete beams in the cooling tower.

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

Description of the Deficiency

Two general areas of the cooling tower structure were reported to have  
greater than allowable transverse shear stresses. A further review of these  
areas indicated that the concrete beams running north and south, which support  
the tile fill, would not be overstressed when subjected to the design basis

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loading. Also, the south wall of the cooling tower was found to be within the acceptable stress limits due to the existence of fill concrete which is placed directly against the wall. At the lower portions of the north wall of the cooling tower basin, a potential for a transverse shear overstress condition was confirmed. The modifications required to strengthen this wall are complete and documented on engineering change approvals (ECAs 014146D, 014182C, 014185B, 014199D, and 014224B). These ECAs have been signed off as "work completed".

Analysis of Safety Implications

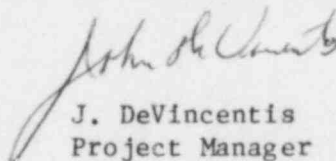
Had this design deficiency not been revealed before plant operation, the area of the tower structure in question would be overstressed if all design loads (including seismic loads) were applied. Since the ultimate strengths of the portions of the structure in question would not be exceeded or approached, gross structural failure and/or collapse would not occur.

Corrective Action Taken

The additional strengthening required to eliminate the overstress has been engineered and the design has been finalized. The incorporation of the design modification has been completed.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

  
J. DeVincentis  
Project Manager

MHO/pf

cc: Atomic Safety and Licensing Board Service List

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