

May 19, 1982

SBN-278
T.F. B 7.1.2

United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. Frank J. Miraglia, Chief
Licensing Branch #3
Division of Licensing

References: (a) Construction Permits CPPR-135 and CPPR-136, Docket
Nos. 50-443 and 50-444
(b) PSNH Letter, dated April 8, 1982, "Meeting Notes;
Structural Engineering Branch Design Audit," J.
DeVincentis to F. J. Miraglia

Subject: Submittal of Followup Documentation; Structural Engineering
Branch Design Audit

Dear Sir:

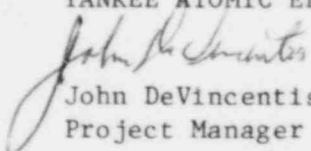
We have enclosed followup documentation from the Structural Engineering
Branch Design Audit, which was conducted at the offices of United Engineers
on March 29, 1982 through April 2, 1982.

The following "Action Items" indicated in Reference (b) are included with this
submittal:

- . Action Item #2, dated 3/30/82
- . Action Item #1, dated 3/31/82
- . Action Item #1, dated 4/1/82

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY


John DeVincentis
Project Manager

Enclosure

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PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

SEABROOK STATION, UNITS 1 & 2

NRC-SEB DESIGN AUDIT (3/29/82 to 4/2/82)

at

UNITED ENGINEERS & CONSTRUCTORS INC.

RESPONSE TO ACTION ITEM NO. 2, DATED 3/30/82

REF. RAI NO. 220. 21

Consideration of 'Accidental Torsion'

SB 1 & 2

FSAR

Action Item 2, dated 3/30/82RAI 220.21, (3.7(B).2.11)

The present technical position of the staff requires that the accidental torsion, based on 5% eccentricity of the larger of the projected base dimensions times the story shear, be included in the design of structures. This is in addition to that which results from the actual geometry and mass distribution of the building. Either indicate your willingness to comply with this position for all Category I structures or provide justification for not doing so.

Response

As discussed with the NRC on 3/30/82, UE&C is to provide an assessment of the impact for "accidental torsion" based on 5% eccentricity in the design of the containment structure and a typical Category I structure.

An accidental torsion based on criteria of SRP 3.7.2, Rev. 1, July, 1981, was considered in the design of the containment structure and the fuel storage building. It is found that the maximum structural stress levels increased by less than 2% for both the buildings under consideration due to the incorporation of this accidental torsion and the resulting design stresses are within the acceptable limits. Therefore, incorporation of accidental torsion in the design of the structures has a negligible effect and does not affect the present design (without accidental torsion).

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

SEABROOK STATION, UNITS 1 & 2

NRC-SEB DESIGN AUDIT (3/29/82 to 4/2/82)

at

UNITED ENGINEERS & CONSTRUCTORS INC.

RESPONSE TO ACTION ITEM NO. 1, DATED 3/31/82

REF. RAI NO. 220.11

SB 1 & 2
FSARRAI 220.11 (3.5.3)

Section 3.5.1.3.C.1 of the FSAR states that perforation of the containment is not considered to be unacceptable damage, and containment liner is expected to prevent secondary missiles from entering the containment. FSAR Section 3.5.3.1.b also says that no steel barriers were designed. Clarify how you have ensured that the integrity of liner plate will not be impaired.

RESPONSE

Those turbine missiles identified as possessing sufficient energy to perforate the containment shell have been evaluated as part of a probabilistic study which has determined that these missiles fall into an established category of acceptable risk (see FSAR Section 3.5.1.3) and, as such, are not a design consideration for the containment structure.

The remaining turbine missiles do not possess sufficient energy to perforate the containment shell. Some may possess sufficient energy to cause dislodgement of concrete on the inside face, local to the impact area, but the liner plate will serve to contain these concrete fragments, thus preventing any secondary missiles from entering the containment.

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

SEABROOK STATION, UNITS 1 & 2

NRC-SEB DESIGN AUDIT (3/29/82 to 4/2/82)

at

UNITED ENGINEERS & CONSTRUCTORS INC.

RESPONSE TO ACTION ITEM NO. 1, DATED 4/1/82

Criteria for Rigid and Non-rigid Walls subjected
to Lateral Earth Pressures.

SB 1 & 2

NRC-SEB DESIGN AUDIT (3/29/82 to 4/2/82)

Action Item No. 1, dated 4/1/82

Issue:

Clarify the criteria for rigid and non-rigid walls subjected to static and dynamic lateral earth pressures.

RESPONSE

Retaining walls not supported at the top by floors, etc., were considered as non-rigid walls in the Seabrook Projects. Walls for the Category I Electrical Manhole and also the Seawalls were designed as non-rigid walls.

All the foundation walls supported and effectively restrained by floors, walls, etc., were considered as rigid walls in the Seabrook Projects.