PSNH

SEABROOK STATION
Engineering Office

Public Service of New Hampshire

New Hampshire Yankee Division

June 3, 1985

SBN - 808
T.F.B7.1.2.

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

Attention: Mr. George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing

Reference: (a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444

Subject: Response to SER Outstanding Issue No. 8 Regarding SER Section 12.3.2

Dear Sir:

As indicated in Safety Evaluation Report Section 12.3.2, PSNH has performed a radiation and shielding design review for vital area access in accordance with Item II.B.? of NUREG-0737. The conclusions of staff review were made subject to receipt of an FSAR amendment for this TMI Action Plan item. Accordingly, please find enclosed a copy of the revised FSAR pages which address this issue. This change will be incorporated into the FSAR in a future amendment.

If you require any additional clarifications/information regarding the above, please do not hesitate to contact us.

Very truly yours,

John DeVincentis, Director
of Engineering and Licensing

cc: Atomic Safety and Licensing Board Service List

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g. General Plant Yard Areas

All shielding is designed such that the dose rates in plant yard areas which are frequently occupied by plant personnel remain below 0.5 mr/hr. These areas are surrounded by a security fence, and are closed off from areas accessible to the general public for general safety.

→ INSERT 12.3.2.2

12.3.3 Ventilation

The station ventilation system has been designed to provide a maximum of safety and convenience for operating personnel, construction workers and site visitors working both within the station radiation control area (restricted area) and in station buildings outside the radiation control area during normal operating and anticipated operational occurrences. The potential exposure to on-site personnel and to members of the general public resulting from airborne radionuclides from station operation complies with 10 CFR Part 20 and 10 CFR Part 50, respectively.

Maximum airborne radioactivity concentrations for normal operations and anticipated transients are as follows:

a. Within radiation control area: limits as specified in 10 CFR Part 20, Appendix B, Table I.

b. Station buildings and areas outside radiation control area: limits as specified in 10 CFR Part 20, Appendix B, Table II.

c. Areas outside station restricted area: dose objectives as set forth in 10 CFR Part 50, Appendix I.

12.3.3.1 Ventilation Design Bases

Descriptions of the ventilation systems for each building which can be expected to contain radioactive materials, including design bases, are contained in Section 9.4. Diagrams associated with the descriptions show equipment, air flow patterns, and expected flow rates for normal and emergency conditions.

A description of the ventilation systems for the control room complex is contained in Subsection 9.4.1 and Figure 9.4-1, and shows equipment, air flow patterns, and expected flow rates. Section 6.4 discusses the habitability and life support systems of the control room complex with respect to NRC General Design Criterion 19.

In each case, air flow has been directed from areas of low potential airborne radioactivity to areas of higher airborne radioactivity by exhausting from the areas of higher radioactivity. The ventilation rate for the areas of higher radioactivity was determined both from the ventilation rate required to remove equipment heat, piping and electrical losses and

12.3.2.2 Plant Shielding to Provide Access to Vital Locations for Post-Accident Operations

Following an accident, significant radioactivity may be released from the reactor core, presenting unusual hazards to operating personnel. A review was conducted to assess the projected amount of activity released, systems involved in transport of this activity, effect of the transported activity on plant dose rates and acceptability of dose rates in locations requiring access for necessary operations (vital locations).

This assessment employed core fission product release source terms consistent with NUREG-0737, Section II. B.2 (100% noble gas, 50% halogen, 1% other fission product). The assessment addressed both pressurized and de-pressurized accidents, and projected consequences of the release at post-accident times ranging from 21.9 minutes to 1 year.

The systems considered in this assessment included containment spray, chemical and volume control, safety injection, residual heat removal and combustible gas control.

Using the source term and system transport information described above, dose rates in various plant areas were projected. These projections considered shine, scatter and radiation streaming, including effectiveness of facility shielding. Levels in areas which must be accessed for operational tasks (vital locations) were tabulated, along with occupancy times, to verify projected exposures are within applicable limits. Such locations included the control room, technical support center, post accident sample station, chemistry laboratory, switch gear room, radwaste control station, radiation controlled area tunnels and hydrogen analyzer area. Dose rates for high dose rate areas are graphically depicted on area zone maps of the plant to aid in projecting exposures for potential post-accident operations not explicitly identified in the vital location table. Results of these projections demonstrate projected exposures in vital locations are within the GDC-19 and NUREG-0737 (Item II. B.2) criteria.

The assessments described above were incorporated into the Post-Accident Dose Engineering Manual, which is used in planning for post-accident operations. Rational for not including several areas noted in NUREG-0737 (Item II-B.2) are delineated in this manual. A copy of the manual was provided to the NRC. The information in this document will be factored into the overall post-accident response actions.

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