PSNH PUBLIC SERVICE
Company of New Hampshire

SEABROOK STATION
Engineering Office:
1671 Worcester Road
Framingham, Massachusetts 01701
(617) - 872 - 8100

November 5, 1982

SBN-352
T.F. B7.1.2

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

Attention: Mr. George W. Knighton, Chief
Licensing Branch 3
Division of Licensing

References:
(a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444
(b) USNRC Letter, dated March 1, 1982, "Request for Additional Information," W. C. Tallman to F. J. Miraglia
(c) PSNH Letter, dated April 8, 1982, "Response to 460 Series RAIs; (Effluent Treatment Systems Branch)," J. DeVincentis to F. J. Miraglia
(d) PSNH Letter, dated July 12, 1982, "Amendment 45 to March 30, 1973, Application to Construct and Operate Seabrook Station Unit 1 and Unit 2; Incorporation of Requests for Additional Information (RAIs)," W. P. Johnson to F. J. Miraglia
(e) PSNH Letter, dated November 4, 1982, "Revised Response to RAI 460.35; (Effluent Treatment Systems Branch)," J. Devincentis to G. W. Knighton

Subject: Revised Response to RAI 460.35(f); (Effluent Treatment Systems Branch)

Dear Sir:

We have enclosed a revised response to the subject Request for Additional Information (RAI) which you forwarded in Reference (b).

The original response to RAI 460.35(f) was submitted in Reference (c) and subsequently incorporated into the FSAR [OL Application Amendment 45, Reference (d)].

RAI 460.35(f), as revised, justifies the non-inclusion of a gross radioactivity monitor in the Service Water System.

The revised RAI 460.35(f) will be included in Amendment 48 to the OL Application.

Note that a revised response to 460.35(g) was submitted in Reference (e) and has been incorporated herein.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

David A. Maidrand for

J. DeVincentis
Project Manager

B001

ALL/fsf

RESPONSE:

The Seabrook design does include a plant vent monitor. This monitor is described in Subsection 12.3.4.

RAI 460.35

Acceptance Criteria II.C.1.a states the gaseous and liquid process streams or effluent release points should be monitored and sampled according to Tables 1 and 2 of SPR 11.5. Information provided in Section 11.5 of the FSAR indicates that the Seabrook Station does not meet this criteria in the following areas:

a) Plant vent does not contain a continuous radiation monitor for noble gas effluents. (see question above)

b) Containment purge lines do not contain a process monitor nor the capability to isolate the purge line on a high radiation monitor. (Note: Area monitors are not an effective means for meeting 10 CFR Part 20 unrestricted area airborne concentration limits.)

c) The fuel storage building does not contain a process monitor from it exhaust to the plant vent.

d) The turbine gland steam condenser exhaust is discharged to the atmosphere unmonitored.

e) The turbine building sumps are to release their contents on a batch basis with only a sample taken and analyzed prior to release. Since there is no means to isolate the sump and since the release is not monitored, a monitor is required for turbine building effluent along with an automatic control feature to isolate the discharge on a high radiation signal.

f) A gross radioactivity monitor is required for the service water effluent line.

g) The capability to obtain a grab sample in the stream from the following sources has not been provided:

(1) containment purge

(2) PAB ventilation system

(3) fuel storage building

(4) waste processing building area handling radwaste

(5) turbine gland steam condenser

(6) evaporator vent system (i.e., distillate coolers)

(7) SG flash tank distillate cooler

(8) pressurizer and BRS vent systems

(9) component cooling water system

Commit to the installation of the above process and effluent monitors and the sampling of the above sources.

RESPONSE:

a) The plant vent monitor is described in Subsection 12.3.4.

b) The capability to monitor the containment purge lines and to isolate these lines on a high radiation indication will be included in the plant design.

c) The capability to monitor the exhaust from the fuel storage building is included in the plant design. This monitoring capability is described in Subsection 12.3.4.

d) The exhaust from the turbine gland steam condenser will either be monitored separately, or directed to the main plant vent.

e) The capability to monitor the effluent from the turbine building sumps will be included in the plant design.

f) We are evaluating the possible sources of radioacitve contamination of the service water system to ensure that they are monitored. We will inform the NRC regarding the results of our review later.

see attached response to (F)

g) The capability to obtain grab samples from the nine process and/or effluent streams indicated is either in the present system or will be included. In addition, grab sampling capability will be provided for the Main Condenser Evacuation System mechanical vaculum pumps such that samples can be obtained during startup as well as during normal station operation.

revised per 11/4/82 PSNH Letter Reference (e)

RAI 460.36

Does the design of the process and effluent monitoring systems meet the guidelines of Appendix 11.5-A of SRP 11.5, Regulatory Guide 4.15 (Position C), Regulatory Guide 1.97 (Position C and Table 2)?

RESPONSE:

The design of the radiation monitoring system conforms with the guidelines of Appendix 11.5-A of SRP 11.5 and Regulatory Guide 1.97 (Position C and Table 2). The design is sufficient to support the radiological monitoring program (Regulatory Guide 4.15).

f) The function of the Service Water System (SWS) is to transfer heat loads from the following sources:

(1) Condenser water box priming pump seal water heat exchangers,

(2) Secondary component cooling water heat exchangers,

(3) Diesel generator jacket water coolers, and

(4) Primary component cooling water heat exchangers.

These heat loads, from both the primary and secondary portions of the plant, are transferred to the ultimate heat sink via the SWS. The SWS takes suction from and discharges to the transition structure of the Circulating Water System.

None of the systems listed above are normally radioactive. However, the Primary Component Cooling Water (PCCW) System could possibly become radioactively contaminated should a tube leak occur in one of the PCCW heat exchangers or coolers which contain reactor coolant. This occurrence would be detected by an increasing level in the PCCW surge tank and by the PCCW System radiation monitors. For the SWS to become contaminated, an additional tube failure in the PCCW/SWS heat exchanger would have to occur. This type of failure would readily be detected by a decreasing level in the PCCW surge tank. A leak rate from the PCCW System as low as 5 gpm would require refilling the surge tank approximately every two hours and would be considered unacceptable for continued plant operation and would require a plant shutdown to affect repairs.

Because of the high SWS flow rate through the PCCW/SWS heat exchanger, the dilution rate for the above leak rate would result in a concentration below the limits of detectability.

However, should a leak between the PCCW System and the SWS be confirmed, and the PCCW System is radioactively contaminated, plant procedures will require periodic grab samples of the SWS for analysis.

Additionally, it should be noted that Seabrook, unlike many other nuclear facilities, does not discharge effluents from the Radioactive Liquid Waste Processing System into the SWS.

For the above reasons, gross activity monitors on the SWS are not required.