PSNH PUBLIC SERVICE
Company of New Hampshire

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November 18, 1982

SBN-377
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 February 12, 1982, "Request for Additional Information," F. J. Miraglia to W. C. Tallman
(c) PSNH Letter, dated March 12, 1982, "Response to 410 Series RAIs; (Auxiliary Systems Branch)," J. DeVincentis to F. J. Miraglia
(d) PSNH Letter, dated August 27, 1982, "Amendment 46 to March 30, 1973, Application to Construct and Operate Seabrook Station Unit 1 and Unit 2," W. P. Johnson to F. J. Miraglia

Subject: Revised Response to RAI 410.31 (SRP Section 9.3, Auxiliary Systems Branch)

Dear Sir:

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

The original response to RAI 410.31 was submitted in Reference (c) and was subsequently incorporated into the FSAR [OL Application Amendment 46, Reference (d)].

The enclosed response will be included in OL Application Amendment 48.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

J. DeVincentis
Project Manager

ALL/fsf

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cc: Atomic Safety and Licensing Board Service List

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410.31 (9.3.1) Verify that the compressed air furnished to operate safety-related equipment meets the requirements of ANSI MC 11.1-1976, (ISA-S7.3). In order to assure continuous reliable functioning of compressed air-operated valves, provide a Technical Specification or procedure to require testing of the instrument air quality. Describe the procedures to be followed to detect and correct degradation of the instrument air quality and the limits on degradation from the ANSI Standard MC 11.1 which will be imposed on the air quality.

RESPONSE: Each of the elements of the Quality Standard for Instrument Air, ISA-S7.3, is addressed below:

4.1 Dew Point (at line pressure)

Since part of the plant instrument air system is exposed to the outdoor atmosphere, element 4.1 of the Quality Standard requires that the dew point of the instrument air at line pressure be at least 18°F below the minimum outdoor temperature at the site.

Per the Service Environment Chart, F-300219, the minimum outdoor temperature at the site is 0°F. Therefore, the dew point at line pressure must be no greater than (-) 18°F. The outlet air dew point of the instrument air dryers at the instrument air header pressure is (-) 40°F.

For the containment instrument air system, which is fully enclosed and, therefore, does not come in contact with the outdoor atmosphere, the applicable minimum temperature is the minimum temperature inside containment, 50°F per the Service Environment Chart. Therefore, the dryer outlet dew point temperature should be 32°F maximum.

The refrigeration dryer's outlet pressure dew point is 65°F below the dryer inlet temperature. The dryer inlet temperature is specified as 105°F, which sets the worst dryer outlet dewpoint at (+) 40°F.

The two temperature bounds, 50°F minimum containment temperature and 105°F specified maximum dryer inlet temperature, are operational extremes which, taken individually, form the basis for in-containment equipment selection. But the two extremes would never both be experienced within a short period of time, so it is not reasonable to apply both extremes simultaneously to a design evaluation. By depressing the dew point 40°F below the dryer inlet temperature, the containment instrument air dryers provide adequate confidence that the containment instrument air system will remain "dry".

4.2 Particle Size

Element 4.2 of the Quality Standard requires that the maximum entrained particle size at the instrument be three microns.

The dual filters located in each IA subheader and the filter/regulators located just upstream of each user (as supplied by the user manufacturer) both provide approximately 40 micron filtration (for both the plant and containment IA Systems).

The manufacturers of the pneumatic instruments and valve actuators have determined that operation of their equipment using 40 micron filtration devices does not cause damage which affects performance. Therefore, these manufacturers supply 40 micron filter/regulators as standard accessories. These filter/regulators along with the system filters provide redundant means for removal of particles. Based on the above, the filtering capacity of 40 micron filter size for Seabrook is deemed adequate in preventing damage to the equipment.

4.3 Oil Content

Element 4.3 of the Quality Standard requires that the maximum condensible hydrocarbon content of the instrument air (under normal operating conditions) not exceed 1 ppm either on a weight basis or on a volume basis.

The compressors are oil-free (there is no infiltration of lubricating oil), as are the dryers.

4.4 Contaminants

The Quality Standard requires that the instrument air be free of corrosive or otherwise hazardous contaminants. The two instrument air systems (plant and containment) are fed compressed air from (1) turbine building and (2) containment. There should be no detrimental gaseous contamination in these intake areas. Particulate contamination, should it become entrained in the air stream, would be removed by the filter in the system. Procedures for monitoring the instrument air quality will be available three months before fuel load. These procedures shall incorporate periodic sampling (at least once per year or during refueling shutdowns whichever is more frequent) of the instrument air quality. Any technical specifications will be developed following the guidance in NUREG-0452, Standard Technical Specifications.