



May 27, 1986

Public Service of New Hampshire

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T.F. B7.1.2

United States Nuclear Regulatory Commission
Washington, DC 20555

Attention: Mr. Vincent S. Noonan, Project Director
PWR Project Directorate No. 5

References: (a) Construction Permits CPPR-135 and CPPR-136,
Docket No. 50-443 and 50-444

Subject: Confirmatory Issue No. 41 - Systems Outside Containment
Containing Radioactive Material - NUREG 0737, Item
III.D.1.1

Dear Sir:

Enclosed herewith is the description of the surveillance program that responds to NUREG 0737, Item III.D.1.1, Integrity of Systems Outside Containment Likely to Contain Radioactive Materials.

We trust that the enclosed is acceptable and request that the resolution of the above referenced SER Confirmatory Issue be reflected in the next supplement to Seabrook's SER.

Very truly yours,

John DeVincentis
Director of Engineering

Enclosure

cc: Atomic Safety and Licensing Board Service List

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INTEGRITY OF SYSTEMS OUTSIDE CONTAINMENT
LIKELY TO CONTAIN RADIOACTIVE MATERIAL

Position

NUREG 0737, Item III.D.1.1

Applicants shall implement a program to reduce leakage from systems outside containment that would or could contain highly radioactive fluids during a serious transient or accident to as-low-as-practical levels. This program shall include the following:

- (1) Immediate leak reduction
 - (a) Implement all practical leak reduction measures for all systems that could carry radioactive fluid outside of containment.
 - (b) Measure actual leakage rates with system in operation and report them to the NRC.
- (2) Continuing Leak Reduction - Establish and implement a program of preventive maintenance to reduce leakage to as-low-as-practical levels. This program shall include periodic integrated leak tests at intervals not to exceed each refueling cycle.

Clarification

Applicants shall provide a summary description, together with initial leak-test results, of their program to reduce leakage from systems outside containment that would or could contain primary coolant or other highly radioactive fluids or gases during or following a serious transient or accident.

- (1) Systems that should be leak tested are as follows (any other plant system which has similar functions or postaccident characteristics even though not specified herein, should be included):

Residual heat removal (RHR)

Containment spray recirculation

High-pressure injection recirculation

Containment and primary coolant sampling

Reactor core isolation cooling

Makeup and letdown (PWRs only)

Waste gas (includes headers and cover gas system outside of containment in addition to decay or storage system)

Include a list of systems containing radioactive materials which are excluded from program and provide justification for exclusion.

- (2) Testing of gaseous systems should include helium leak detection or equivalent testing methods.
- (3) Should consider program to reduce leakage potential release paths due to design and operator deficiencies as discussed in our letter to all operating nuclear power plants regarding North Anna and related incidents, dated October 17, 1979.

Response

A leakage reduction surveillance program has been developed and baseline data is being taken as a part of the initial startup effort. The surveillance program includes the following systems:

Residual Heat Removal (RH)

Containment Spray Recirculation (CBS)

Chemical and Volume Control (ECCS portion) (CS)

Safety Injection (SI)

Primary Coolant Sampling (SS)

Systems that may contain radioactive fluids under post accident conditions that are not included in this surveillance are:

Hydrogen Recombiners (CGC)

Basis: Seabrook's hydrogen recombiners are located inside the primary containment building.

Hydrogen Detection (CGC)

Basis: The hydrogen detectors and associated tubing are tested during the containment type A integrated leak rate test (ILRT) per 10 CFR 50 APPX J. The containment isolation valves are locked closed during normal plant operation. (Note: The valves are unlocked and opened for the ILRT).

Waste Gas (VG)

Basis: The vent gas headers in the containment are only used during infrequent maintenance operations during refueling outages such as the fill and vent of the reactor coolant system. Use of the system involves containment entry to open normally closed manual valves. This system is not required for post accident monitoring or for accident mitigation.

The surveillance procedure contains data sheets which are used to document visual inspections of the piping outside containment for each system in the program. The visual inspections are a "hand-over-hand" type walkdown while the system is in operation, (usually during a pump functional test).

Types of potential leakage locations include valve bolted joints, valve packing, heat exchanger flanges, pump shafts, etc. The data sheets record work request numbers which are initiated when leakage is found.