

NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
NEW YORK WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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June 23, 1980

Docket Nos. 50-213
50-245
50-336
B10022

Director of Nuclear Reactor Regulation
Attn: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Mr. Robert A. Clark, Chief
Operating Reactors Branch #3
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

References: (1) W. G. Council letter to H. R. Denton dated May 6, 1980.
(2) H. R. Denton letter to All Operating Nuclear Power Plants
dated October 30, 1979.

Gentlemen:

Haddam Neck Plant
Millstone Nuclear Power Station, Unit Nos. 1 and 2
TMI Item 2.1.8.a
Improved Post-Accident Sampling Capability

By Reference (1), Connecticut Yankee Atomic Power Company (CYAPCO) and Northeast Nuclear Energy Company (NNECO) fulfilled previous NRC requests and licensee commitments by docketing conceptual designs for the post-accident sampling systems targeting for installation by January 1, 1981. Continuing CYAPCO and NNECO refinement of the design has identified several potentially ambiguous requirements which are detailed in Reference (2). In the interest of ensuring that the Staff has an accurate understanding of the design philosophy and intent, the following clarifications to Reference (1) are hereby provided. The clarifications referred to quotations from Reference (2) as indicated.

Item 1

Reference (2) states "The licensee shall have the capability to promptly obtain (in less than 1 hour) pressurized and unpressurized reactor coolant samples and a containment atmosphere (air) sample". It is possible that reference to the terms "pressurized and unpressurized" could apply to either the reactor coolant system from which the sample is obtained or to the sample itself. The appropriateness of the capability to obtain samples from a pressurized or unpressurized reactor coolant system is easily recognized, and it is our

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intent to design the system accordingly. However, there is no apparent justification for designing the capability to process pressurized samples. Under the post-accident source terms specified, pressurized samples represent an unnecessary safety concern due to possibility of leakage from the sample container and the potential for flashing of the sample.

In light of the above considerations, it is CYAPCO's and NNECO's intent to install a sampling system capable of obtaining samples from either a pressurized or unpressurized reactor coolant system and all samples will be unpressurized.

Item 2

Reference (2) states ". . . quantification of the following:

1. certain isotopes that are indicators of the degree of core damage (i.e., noble gases, iodines and cesiums and non-volatile isotopes),
2. hydrogen levels in the containment atmosphere in the range 0 to 10 volume percent,
3. dissolved gases (i.e., H₂, O₂) and boron concentration of liquids."

Recent discussions with the NRC Staff have revealed that the intent of the requirement regarding dissolved gas refers to only total dissolved gases and not an individual species identification. The basis for this position is that the safety concern relates to the rate of formation of a gas bubble and not to the possibility of a hydrogen explosion.

In light of the above considerations, it is CYAPCO's and NNECO's intent to install a system with the capability to determine total dissolved gas only. Hydrogen or oxygen or other species identification will not be made available.

Item 3

Reference (2) does specify a requirement to perform chemical analyses on the primary coolant other than dissolved gas, boron concentration, and activity. Recent discussions with cognizant industry personnel have suggested that sampling system requirements may ultimately include other chemical analyses, such as pH and chloride concentration.

CYAPCO and NNECO do not believe that these additional provisions are necessary and as such, chemical analysis capability will include only dissolved gas, boron, and activity analyses.

Item 4

Reference (2) states "Procedural changes and/or plant modifications must assure that it shall be possible to obtain and analyze a sample while incurring a radiation dose to any individual that is as low as reasonably achievable and not in excess of GDC 19". The limit for GDC 19 is 5 Rem

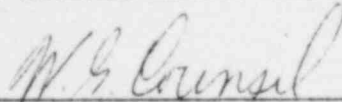
whole body which corresponds to 75 Rem extremity dose. Cognizant industry personnel have suggested that the design requirements are 3 Rem whole body and 18.75 extremity dose.

Please be advised that CYAPCO and NNECO are designing the system to comply with GDC 19 criteria with the use of ALARA guidelines. It is also noted that one individual may receive up to 5 Rem to obtain the sample and another individual may receive up to 5 Rem to analyze the sample.

The above information is being docketed to clarify the intent of Reference (1). The scheduling and prioritization concerns identified in Reference (1) continue to escalate with the continued absence of Staff feedback regarding integration of major modifications under the Systematic Evaluation Program.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY



W. G. Council
Senior Vice President