



CONNECTICUT YANKEE ATOMIC POWER COMPANY

TELEPHONE  
203-665-5000

BERLIN, CONNECTICUT  
P.O. BOX 270 HARTFORD, CONNECTICUT 06141-0270

September 19, 1986

Docket No. 50-213  
B12205

Office of Nuclear Reactor Regulation  
Attn: Mr. Christopher I. Grimes, Director  
Integrated Safety Assessment Project Directorate  
Division of PWR Licensing - B  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Gentlemen:

Haddam Neck Plant  
Integrated Safety Assessment Program

In a letter dated July 31, 1985,<sup>(1)</sup> Connecticut Yankee Atomic Power Company (CYAPCO) was requested to provide the Staff with reviews of the planned CYAPCO plant improvement projects.

In response to this request, and in accordance with our understanding of the ISAP process, we are providing the Staff with reviews of the following projects:

- 1) ISAP Topic No. 2.02 - "Demineralized Water Storage Tank (DWST) Oxygen Reduction"
- 2) ISAP Topic No. 2.10 - "Administration Building Upgrade"

As further reviews are completed, we will promptly forward them to the Staff for review.

If you have any questions on this material, please feel free to contact my staff.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY

J. F. Opeka  
J. F. Opeka  
Senior Vice President

8610020097 860919  
PDR ADOCK 05000213  
P PDR

C. F. Sears  
By: C. F. Sears  
Vice President

(1) H. L. Thompson letter to J. F. Opeka, "Integrated Safety Assessment Program," July 31, 1985.

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Haddam Neck ISAP Topic No. 2.02

Demineralized Water Storage Tank (DWST) Oxygen Reduction

September 1986

Haddam Neck ISAP Topic No. 2.02  
Demineralized Water Storage Tank (DWST) Oxygen Reduction

Background

Feedwater impurities, especially oxygen, are the most serious contributors to the corrosion process in systems in contact with the feedwater and can cause severe damage to components if not controlled. This damage may show up as steam generator tube denting, feedwater heater fouling, and possibly turbine disc cracking.

Oxygen is the most serious contributor to the corrosion process in the condensate and feedwater systems and can cause severe damage to components if not controlled. The Demineralized Water Storage Tank (DWST) is a known source of oxygen, and eliminating this oxygen source will undoubtedly have a positive effect on the corrosion of the condensate and feed train components. The basic considerations in achieving and maintaining low oxygen levels in the demineralized water storage tank are to ensure that the makeup water be deaerated to a low oxygen level before it enters the DWST and to prevent oxygen from being picked up by water stored in the DWST. This will help to minimize corrosion in the steam generators, and it will also help to reduce the transport of iron and copper oxides to the steam generator, thus reducing the sludge buildup and helping to reduce the denting caused by copper oxides.

Project Description

The proposed project pertains to the design and installation of a nitrogen blanketing system for the Demineralized Water Storage Tank (DWST). The purpose of the project is to reduce oxygen content on the secondary side. The DWST, presently an atmospheric tank, is a major source of oxygen in the feedwater system.

The nitrogen blanketing system consists of the following major components:

- a) liquid nitrogen storage tank;
- b) ambient vaporizers;
- c) pressure/temperature control manifold;
- d) pressure reducing regulator; and
- e) 2 - 100% capacity breather valves.

The system will function so as to maintain a constant pressure nitrogen blanket on the water in the DWST during makeup to or letdown from the condenser hotwells during normal operation. The breather valves are designed to operate during various pump-in modes or if tank drawdown exceeds nitrogen makeup capacity thereby maintaining tank integrity.

The system is partially installed, and some testing has been completed.

CYAPCO Evaluation

The reduction of secondary side oxygen by installation of a nitrogen blanketing system to the DWST represents only one aspect of secondary side corrosion control. Thus, it is expected that the reduction in public risk will be negligible. Pending completion of installation and testing, CYAPCO considers this ISAP topic to be closed.



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Haddam Neck ISAP Topic No. 2.10

Administration Building Upgrade

September 1986

Haddam Neck ISAP Topic No. 2.10  
Administration Building Upgrade

Background

The Administration Building upgrade concerns the evaluation of the feasibility, including cost estimates, of various options for increasing the Haddam Neck Administration Building space and also construction of a records vault. The feasibility study has been completed and an option has been selected.

Since 1979, the Haddam Neck facility has had multiple audit findings on the inadequacy of the present nuclear records vault. The current records vault is too small and is not equipped to provide suitable environmental conditions for storing of radiographs and magnetic tapes. The current temperature and humidity requirements are not adequate to store fiche and 16 mm silver film.

At the present time, the nuclear records vault location is not convenient for both Nuclear Plant Records personnel and other people researching material housed there. In addition, the current Haddam Neck records facility has no fire protection system which is also an ANSI recommendation.

The nuclear records office facility itself, which houses personnel and associated processing equipment, has also become inadequate. At the present time, there is insufficient room for the set up of microfilm cameras and for filming personnel.

CYAPCO has concluded that an overall area of 2500 square feet is required to adequately house both records and personnel. At the present time 920 square feet is available for administration space and 336 square feet for the records vault. The 2500 square feet requested would be optimally divided, with 1500 square feet for administration offices and 1000 square feet for the records vault. If a particular option would not give the requested 2500 square feet, a proportionate amount would be divided between office space and the records vault space respectively.

Project Description

In response to the above-mentioned concerns at the Haddam Neck facility, a feasibility study was undertaken to determine which of the eight proposed options would be the most cost effective but still provide a high degree of workability. In addition, two more options, I and J, were investigated for feasibility only, with no cost analysis performed. The ten options are:

- A. Expand first floor into overhang.
- B. Expand into lobby.
- C. Expand both floors by twenty-five feet.
- D. Store excess records in Berlin complex.
- E. Erect a pre-engineered building.

- F. Erect a modular building.
- G. Expand first floor into overhang and to the south.
- H. Expand first floor into overhang in addition to two-story expansion to the south.
- I. Permanent structure over oil room.
- J. Permanent structure on service building roof.

Option A has been chosen, and all engineering design work has been completed.

CYAPCO Evaluation

Pending completion of the associated construction work, CYAPCO considers this ISAP topic completed.