



CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT

362 INJUN HOLLOW ROAD • EAST HAMPTON, CT 06424-3099

November 8, 2002

Docket No. 50-213

CY-02-142

Re: 10CFR50.90

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555

Haddam Neck Plant  
Proposed Technical Specification Change  
Response to Request for Clarification

On April 15, 2002,<sup>1</sup> the U. S. Nuclear Regulatory Commission (NRC) issued a Request for Additional Information (RAI) regarding the Connecticut Yankee Atomic Power Company's (CYAPCO) license amendment request dated September 10, 2001.<sup>2</sup> CYAPCO responded to the RAI on June 19, 2002.<sup>3</sup> An additional "Request for Clarification" was subsequently issued by the NRC and discussed during a conference call on October 23, 2002.

Attachment 1 provides the CYAPCO response to the Request for Clarification. We trust that this response provides the additional information you need to complete the review of the proposed license amendment.

<sup>1</sup> J. E. Donoghue (NRC) letter to K. J. Heider (CYAPCO), "Request for Additional Information Regarding the Proposed Technical Specification Change for the Haddam Neck Plant Yard Crane (MB2926)," dated April 15, 2002.

<sup>2</sup> K. J. Heider (CYAPCO) letter to the U. S. Nuclear Regulatory Commission, "Haddam Neck Plant, Proposed Technical Specification Change," dated September 10, 2001.

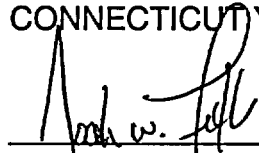
<sup>3</sup> K. J. Heider (CYAPCO) letter to the U. S. Nuclear Regulatory Commission, "Haddam Neck Plant, Proposed Technical Specification Change, Response to Request for Additional Information," dated June 19, 2002.

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Should you have any questions regarding this submittal, please contact  
Mr. Gerry van Noordennen at (860)-267-3938.

Sincerely,

CONNECTICUT YANKEE ATOMIC POWER COMPANY



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N. W. Fetherston  
Site Manager

Subscribed and sworn to before me: Gerard P. van Noordenne  
Notary Public

This 8th day of November, 2002

Date Commission Expires: 12/31/02

Attachment

cc: H. J. Miller, NRC Region I Administrator  
J. N. Donohew, NRC Senior Project Manager  
R. R. Bellamy, Chief, Decommissioning and Laboratory Branch, NRC Region I  
E. L. Wilds, Jr., Director, CT DEP Monitoring and Radiation Division  
D. G. Holland, NRC Project Manager

## **Clarifications on Proposed Technical Specification Change for the Haddam Neck Plant Yard Crane (MB2926)**

### References:

1. NUREG-0554 "Single-Failure-Proof Cranes for Nuclear Power Plants," May 1979.
2. Letter from K. J. Heider of Connecticut Yankee Atomic Power Company to NRC, "Haddam Neck Plant Proposed Technical Specification Change," Docket No. 50-213, September 10, 2001
3. Ederer Incorporated, Generic Licensing Topical Report EDR-1 (P)-A, "Ederer's Nuclear Safety Related eXtra-Safety And Monitoring (X-SAM) Cranes" Proprietary Version, Revision 3, Amendment 3, October 8, 1982.
4. CMAA Specification #70 "Specifications for Electric Overhead Traveling Cranes."
5. NUREG-0612 "Control of Heavy Loads at Nuclear Power Plants: Resolution of Generic Activity A-36," July 1980.

### **Question 1**

Section 2.3 of Ref. 1 provides guidance that the operating environment of the crane should be specified. Discuss how the Yard Crane will be used or left exposed to the outside environment, including what steps are going to be taken to protect the crane from corrosion caused by exposure to humid air and rain. Also, the same section states that drainage should be provided to avoid standing water in the crane structure. Discuss how this guidance is satisfied.

### **Response**

The Yard Crane is an "outdoor" crane. As such the original crane was designed for continuous usage and storage in an outdoor environment. The modifications required to upgrade the crane to single-failure-proof were also designed for continuous outdoor use and storage. The design modifications to the trolley included provisions for drainage to prevent accumulation of standing water. Electrical connections and routing are consistent with outdoor service, including use of strip heaters in key junction boxes to prevent condensation. Periodic inspections and testing performed will include checks for any deterioration of the crane system.

## Question 2

Attachment 3 to Ref. 2 states that "the weld geometries used in a) the existing bridge structure and b) the replacement trolley structure from the existing turbine building crane are not considered to be susceptible to Lamellar tearing." Provide the basis for the statement.

## Response

NUREG-0554, Section 2.6, Lamellar Tearing, states (in part) "When weld joints are carefully designed and fabricated, lamellar tearing is not expected to occur, but for certain weld joints it may be necessary to examine the joint by radiography or ultrasonic inspection, as appropriate....If any of these weld joint geometries would be susceptible to lamellar tearing, the base metal at the joints should be nondestructively examined." Based on the foregoing, only joints considered susceptible to lamellar tearing need be examined. Engineering judgment establishes that only "highly restrained" joints would be cause for lamellar tearing. (See also ASME NOG-1 section NOG-C4251.4.) Figures III.C.1.d.1 and III.C.1.d.2 in Ref. 3 illustrate weld joints typical of trolley and girder structures for high-capacity cranes; such welds are not highly restrained. The structural weld joints in the Yard Crane bridge and replacement trolley frames were reviewed, and it was determined that (1) they do not have geometries that result in a highly restrained condition and (2) they are consistent with the configurations shown in the Ref. 3 Figures. Therefore they need not be examined for lamellar tearing.

## Question 3

Attachment 3 to Ref. 2 states that "the material thicknesses of a) the existing bridge structure and b) the replacement trolley structure from the existing turbine building crane are such that paragraph III.C (C.1.f) of Ref. 3 does not require post weld heat treatment." Please state your basis.

## Response

Paragraph C.1.f of Ref. 3 states (in part) "Normally, it is possible to select material and weld thickness of the large weldments, e.g. girders, trolleys, etc., such that this criteria, which is consistent with Section III, Subarticle NF-4620, of the ASME Code, does not require post weld heat treatment." The thickness of material and welds in the Yard Crane girders and the replacement trolley structure from the existing turbine building crane were evaluated and found to be within the guidelines for exemption from post weld heat treatment, in accordance with Ref. 3.

**Question 4**

Section 4.4 of Ref. 1 recommends that the maximum hoisting speed for the critical load should be limited to that given in the "slow" column of Figure 70-6 of CMAA Specification #70 (Ref. 4). Figure 70-6 gives the hoisting speed for a 100-ton capacity crane as 5 fpm. Explain how the maximum hoisting speed is to be limited to 5 fpm with a maximum line speed of 50 fpm (page III.C-5 of Ref. 3).

**Response**

The maximum line speed of 50 fpm, as referenced in the Topical Report, is a maximum limit for the rope traveling speed at the drum, which is higher than at other points of the reeving system, including the load block. The actual maximum hoisting speed of the critical load was verified to be 5.25 fpm during preoperational testing.

**Question 5**

The proposed revision to Technical Specifications 3.9.7 states that "Loads > 1800 pounds shall be prohibited from travel over fuel assemblies in the spent fuel pool unless such loads are handled by the Single-Failure-Proof Handling System" (Att. 4 to Ref. 2). Although the modified Yard Crane can be used to move heavy loads over spent fuel assemblies, will movement of heavy loads over spent fuel assemblies be avoided.

**Response**

NUREG-0612, Section 5.1.2, Spent Fuel Area – PWR, provides an acceptable means of satisfying the guidelines of Section 5.1. This method includes the use of a single-failure-proof crane in conjunction with satisfying the requirements of Section 5.1.1 to provide defense in depth for heavy load handling operations. As discussed in CYAPCO letters CY-01-108, Proposed Technical Specification Change, dated September 10, 2001 and CY-02-075, Response to Request for Additional Information, dated June 19, 2002, CYAPCO will continue to comply with its established heavy loads program, including the establishment of safe load paths in the Spent Fuel Building. This program will minimize the movement of heavy loads over spent fuel to the extent practical.

**Question 6**

Section 8.2 of Ref. 1 recommends that the features provided for manual movement of the bridge and trolley during an emergency should be tested with the maximum credible load (MCL) attached to demonstrate the ability to function as intended. Discuss if such tests will be performed for the modified Yard Crane.

**Response**

The Field Acceptance Test for the upgraded Yard Crane verified that the Maximum Critical Load could be manually lowered with the emergency drum brake and that the bridge and trolley could be translated manually without power to the trolley or bridge drive motors.

**Question 7**

Have both proprietary and non-proprietary versions of Ref. 3 been submitted on the Haddam Neck Docket? If not, please add these to the Docket.

**Response**

Ederer's Nuclear Safety Related eXtra-Safety And Monitoring (X-SAM) Cranes Generic Topical Licensing Reports, **EDR-1 (P)-A** [proprietary] and **EDR-1 (NP)-A** [non-proprietary], Revision 3 were not specifically docketed by CYAPCO. They were submitted by Ederer on October 8, 1982 and reviewed and accepted by the NRC on August 26, 1983. In the acceptance letter to Ederer, NRC requested that Ederer publish accepted versions of this report, proprietary and non-proprietary, in accordance with the procedures established in NUREG-0390.