

D&D

September 18, 1996

Mr. Ted C. Feigenbaum
Executive Vice President and Chief Nuclear Officer
Northeast Utilities Service Company
c/o Mr. Terry L. Harpster
P.O. Box 270
Hartford, CT 06141-0270

SUBJECT: NRC INSPECTION REPORT 50-213/96-04

Dear Mr. Feigenbaum:

This letter refers to your August 24, 1996 correspondence, in response to our July 22, 1996 letter.

Thank you for informing us of the corrective and preventive actions documented in your letter. These actions will be examined during a future inspection of your license program.

Your cooperation with us is appreciated.

Sincerely,

ORIGINAL SIGNED BY:

John F. Rogge, Chief
Projects Branch 8
Division of Reactor Projects

270111

Docket No. 50-213

cc:

B. D. Kenyon, President - Nuclear Group
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IED 1/1

Mr. T. C. Feigenbaum

2

cc w/cy of licensee response ltr:

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NRC Resident Inspector

Mr. T. C. Feigenbaum

3

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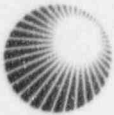
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AUG 21 1996

Docket No. 50-213
B15855

Re: 10CFR2.201

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

Haddam Neck Plant
Reply to a Notice of Violation
NRC Inspection Report No. 50-213/96-04

In a letter dated July 22, 1996,⁽¹⁾ the NRC Staff transmitted to Connecticut Yankee Atomic Power Company (CYAPCO) Inspection Report No. 50-213/96-04. As discussed in the report, the NRC Staff cited CYAPCO for a Notice of Violation, Severity Level IV and a Notice of Deviation.

In its letter, the NRC Staff requested that CYAPCO respond to the Notice of Violation and Notice of Deviation within 30 days of the letter. Pursuant to 10CFR2.201, Attachment 1 hereby provides CYAPCO's response to the subject Notice of Violation. Attachment 2 hereby provides CYAPCO's response to the subject Notice of Deviation.

The following are CYAPCO's commitments made within this letter. Other statements within this letter are provided as information only.

- B15855-1: An approved safety evaluation and a change to the UFSAR is being processed to make the licensing basis documents consistent, specifying that fuel within the spent fuel pool will be moved with 7 feet minimum of submergence. This UFSAR change will be processed by December 31, 1996 and be included in Revision 10 to the UFSAR.
- B15855-2: A comprehensive review of the safety evaluation which was performed to initiate this fuel transfer evolution will be completed. This review will be completed by October 31, 1996.

(1) John F. Rogge letter to T. C. Feigenbaum, "NRC Integrated Inspection Report 50-213/96-04 and Notices of Violation and Deviation", dated July 22, 1996.

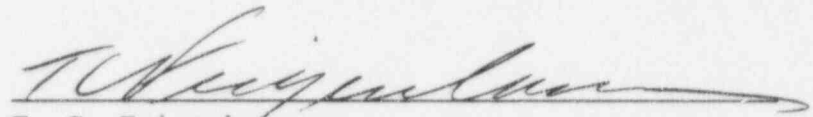
B15855-3: ACM 2.2-9 "Control of Crane Operations" is being revised to include physical qualification of the crane operators. The Maintenance Department will revise the OJT (On-The-Job-Training) Guide to require verification of physical qualifications. These changes will be completed by September 30, 1996.

B15855-4: WCM 2.2-7, "PAB/Pipe Trench Floor Block Lifting Procedure" is being revised to designate the use of standard rigging components instead of the lift rig when lifting the floor blocks. This revision will be completed by October 31, 1996.

If you should have any questions on the information contained herein, please contact Mr. E. P. Perkins, Jr. at (860) 267-3938.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY



T. C. Feigenbaum
Executive Vice President and
Chief Nuclear Officer

cc: H. J. Miller, Region I Administrator
S. Dembek, NRC Project Manager, Haddam Neck Plant
W. J. Raymond, Senior Resident Inspector, Haddam Neck Plant

Docket No. 50-213

B15855

Attachment 1

Haddam Neck Plant

Reply to a Notice of Violation

NRC Inspection Report No. 96-04

August 1996

Attachment 1
Haddam Neck Plant
Reply to a Notice of Violation
NRC Inspection Report No. 96-04

Restatement of Violation:

10 CFR 50.59 states that the licensee may change the facility as described in the final safety analysis report, provided the licensee maintains a written safety evaluation (SE) which provides the basis for the determination that the change does not involve an unreviewed safety question (USQ). The Updated Final Safety Analysis Report (UFSAR) Sections 15.5.2.2 and 9.1.4.2 states that the spent fuel handling equipment assures a minimum of eight feet submergence during fuel movement in the pool. UFSAR Section 9.1.4.2 states that the fuel handling and transfer system consists of equipment and tools necessary for performing refueling operations in a safe and efficient manner, including the transferring of fuel assemblies to the spent fuel pit.

Contrary to the above, no written SE or an inadequate SE was maintained, in that

1. The licensee conducted refueling activities prior to May 1, 1996, with a fuel handling tool providing less than eight feet of fuel submergence. This condition was a defacto change to the facility as described in UFSAR Section 15.5.2.2 and 9.1.4.2, for which the licensee had no SE or documented basis to show that the change was not a USQ.
2. The licensee modified the fuel handling tool for the North Spent Fuel Building crane on May 2 by adding a sling to increase the length of the hoist-tool configuration by one foot. The SE dated May 2, 1996 for the sling modification was inadequate, in that it did not address the effect of the change on the normal operation of the fuel handling equipment for the safe handling and storage of spent fuel. The modified fuel handling tool, in part, caused an irradiated fuel assembly suspended from the spent fuel building hoist to be incapable of safe storage for 25 hours.

This is a Severity Level IV Violation (Supplement I).

Background

Issue 1

By letter dated August 4, 1989, Connecticut Yankee Atomic Power Company (CYAPCO) submitted a proposed revision to technical

specification 3.9.11, which changed the required level of 21 feet of water over the top of irradiated fuel assemblies in the fuel pool to 20 feet.⁽²⁾ Specifically, this change was requested to remove a concern over corrosion of the sluice gate air cylinder which was submerged in borated water with the water level at 21 feet. The submittal's finding of No Significant Hazards addressed the radiation concern from the lowered level and stated that it was well within the requirements of Regulatory Guide 1.25, Revision 2. The pool level was lowered following receipt of the approved license amendment. The effective water level was now approximately 20 feet above stored fuel assemblies and 7 feet above the top of fuel during transit. The processing of this technical specification change did not specifically address impact on the UFSAR. Subsequent revisions of the company procedure, which guided changes to the technical specifications, required documentation of whether the proposed change would affect information in the UFSAR. Fuel transfer activities have been conducted since 1990 in accordance with the technical specifications, but contrary to the condition described in the UFSAR. No safety evaluation was performed to incorporate the pool level change into the UFSAR.

On May 1, 1996, while a fuel assembly move was being planned, the responsible engineers inquired as to whether the move would maintain the UFSAR required height of 8 feet of water over the top of the assembly during transit. Measurements were made to determine the actual minimum depth. The fuel pool level was consistent with the current technical specifications, maintaining the submerged value of 20 feet for the racked assembly. However, the pool level above the assembly was measured to be less than the 8 feet specified in the UFSAR. An Adverse Condition Report (ACR) was written identifying this discrepancy. The focus of the action taken was to perform a safety evaluation to add a sling extension to the fuel handling crane hook to assure that current and future fuel transfers occurred with the UFSAR stated 8 feet of submergence.

1. Reason for the Violation

This violation stated that a defacto change to the facility as described in the UFSAR had been made without a written safety evaluation. The reason for the violation was an inadequate process for changing the Technical Specifications, in that it did not require a review of the

(2) E. J. Mroczka letter to the U. S. Nuclear Regulatory Commission, "Proposed Revision to Technical Specifications Sections 3.6.2, 3.9.11 and 3.9.12 of the Revised Technical Specifications" dated August 4, 1989.

UFSAR for potential associated changes. Subsequent changes to operational procedures governing fuel transfer in the fuel pool did not identify that a UFSAR revision and a supporting safety evaluation were required. The processing of the related proposed technical specification change did not address potential impact on the UFSAR. While technical specification section 3.9.11 had been approved in 1990, with a water depth of 20 feet rather than the previous value of 21 feet, the inconsistency between licensing basis documentation continued to exist. It is not clear why the difference between the actual plant configuration, including the crane, the spent fuel handling tool, and spent fuel pool water level and the discussion within the Updated Final Safety Analysis Report (UFSAR) continued to exist. In addition, the specific technical basis for the eight feet of submergence stated in UFSAR Sections 9.1.4.2 and 15.5.2.2 of the UFSAR is not specifically identified since the analyses addressed only the total submergence requirements of Regulatory Guide 1.25.

UFSAR Section 9.1.4.2 states, "The handling and transfer of all irradiated fuel assemblies and control rod clusters are performed under water to provide continuous cooling and the necessary radiation protection for personnel. During all handling operations the design of the equipment and structures result in handling of assemblies under a minimum of 8 feet of water." It has been demonstrated that with less than the stated eight feet of submergence, adequate radiation protection and cooling has been maintained. This discrepancy was discovered through a questioning attitude, and then proper administrative actions were taken to address the concern.

2. Corrective Steps that have been taken and the results achieved

The corrective action taken at the time of the recognition of the discrepancy was to comply with the more conservative requirements of the UFSAR. Engineering personnel performed a safety evaluation and installed a sling between the crane hook and the spent fuel handling tool bale to allow transfer of the fuel assembly, while maintaining the UFSAR specified value of 8 feet of water cover. When it was discovered that the normal operation of the crane was adversely impacted by the sling extension, a subsequent safety evaluation was performed which demonstrated the acceptability of moving fuel with a minimum of 7 feet of submergence. This safety evaluation was approved based upon detailed radiological surveys.

The corrective action needed to address the condition which existed at the time of the technical specification change, i.e., inadequate routing sheets which did not clearly require an assessment of the impact of any technical specification change on the UFSAR, had already been corrected through modification of the procedure which directs technical specification changes. The current version of the procedure for proposed technical specification changes includes a cover sheet that requires a review for potential changes to the UFSAR.

3. Corrective Steps that will be taken to avoid further Violations

An approved safety evaluation and a change to the UFSAR is being processed to make the licensing basis documents consistent, specifying that fuel within the spent fuel pool will be moved with 7 feet minimum of submergence. This UFSAR change will be processed by December 31, 1996 and be included in Revision 10 to the UFSAR. (Commitment B15855-1) This action addresses the differences between the plant configuration and that described within the UFSAR and will be included in the next UFSAR revision. This change will also be documented as part of the Configuration Management Program.

The generic issue of assuring that changes made to the technical specifications are incorporated into all licensing basis documents is being addressed by the Configuration Management Program which is scheduled for completion in December 1997. This program involves an extensive reconstruction and documentation of the licensing and design basis for the Haddam Neck Plant.

4. Date when full compliance will be achieved

Full compliance was met on May 29, 1996.

Issue 2

Background

As part of the fuel assembly transfer evolution, a safety evaluation was performed to allow a sling extension to be used to assure that the minimum submergence of 8 feet was maintained. This safety evaluation focused on the use of a sling and concluded it did not introduce an unreviewed safety question.

However, it did not give sufficient attention to the actual mechanical and electrical operation of the crane. When the crane lift mechanism would not reset, an investigation into crane operation was conducted. An adverse condition report and a root cause investigation was performed. This investigation identified the concern that the safety evaluation did not address the possible impact of the use of the sling on the operation of the crane. Corrective actions were issued to address mechanical, electrical, and documentation aspects of crane operation.

1. Reason for the Violation

The violation addresses a concern over the adequacy of safety evaluations performed by CYAPCO personnel. The focus of the safety evaluation was how to facilitate the fuel assembly transfer using an extension device which would assure that the minimum submergence was maintained rather than a comprehensive look at the overall fuel transfer process. Inadequate knowledge of the crane travel and reset mechanisms led to suspension of the fuel assembly in an unsecured condition. The root cause investigation, while focusing on the mechanical operation of the crane, did identify the fact that the safety evaluation did not address the possible impact of the use of the sling on the operation of the crane.

This investigation determined that the root cause of the inability of the hoist to move in the upward direction was due to the crane not traveling down far enough to reset the gear limit switch. The crane has a geared limit switch that is activated when the crane is in the full up position. This limit switch does not reset until the crane has traveled downward 15 inches. This fact was unknown by CYAPCO until measured on May 28, 1996, after the event in question.

Lack of indexing between the rack cell and the fuel assembly used to assist the operator in the aligning of the fuel assembly with the storage cell was considered a contributing cause. Indexing could not accurately be performed until the completion of the Spent Fuel Pool Rerack so that final as-built positions of the racks are known.

During this event, the crane and load cell of the crane operated as designed and the crane was being operated correctly. The environmental conditions (clarity, lighting, etc.) were determined to be acceptable.

2. Corrective Steps that have been taken and the results achieved

The corrective action taken at the time of the event was to remove the space sling that was between the crane hook and the spent fuel handling tool bale. A separate safety evaluation was completed and approved based upon radiological surveys demonstrating the acceptability of moving fuel with a minimum of 7 feet of submergence. The fuel assembly was transferred to safe storage following removal of the extension sling.

3. Corrective Steps that will be taken to avoid further Violations

A comprehensive review of the safety evaluation prepared to initiate this fuel transfer evolution will be performed. This review will be completed by October 31, 1996.
(Commitment B15855-2)

4. Date when full compliance will be achieved

Full compliance was met on May 29, 1996.

Docket No. 50-213
E15855

Attachment 2

Haddam Neck Plant

Reply to a Notice of Deviation

NRC Inspection Report No. 96-04

August 1996

Attachment 2
Haddam Neck Plant
Reply to a Notice of Deviation
NRC Inspection Report No. 96-04

Restatement of Deviation

Technical evaluation report section 2.1.4, "Crane Operator Training," stated that the licensee took no exceptions to Guideline 3 of ANSI B30.2-1976 with respect to operator training and qualifications. By letters dated July 20, 1981 and April 16, 1982, the licensee took no exceptions to the standard. Guideline 3 stated that crane operators should be trained and qualified in accordance with Chapter 2-3 of ANSI B30.2-1976, "Overhead and Gantry Cranes."

Technical evaluation report section 2.1.5, "Special Lift Devices," stated that the licensee performs visual inspections prior to use and is developing a systematic program of NDE inspections of critical welds over a 10-year period. By letter dated June 29, 1984, the licensee stated that lifting devices are visually inspected prior to each refueling or use, and that nondestructive testing will be done on the lifting devices on a ten-year cycle. One identified special lift device was the primary auxiliary building hook block lift rig.

Contrary to the above, the licensee failed to implement two commitments regarding control of heavy loads, in that

1. On May 23, 1996, the licensee identified that an individual was not physically qualified to the standards of chapter 2-3 of ANSI B30.2-1976 even though recorded as a qualified crane operator. Further, the physical examinations performed on crane operators did not specifically identify physical qualification standards of ANSI B30.2-1976 section 2-3.1.2.
2. On April 9, 1996, the licensee identified that the primary auxiliary building hook block lift ring was not included in procedure PMP 9.5-131, "Special Lifting Device Inspection and/or Load Testing" revision 6. The primary auxiliary building hook block lift rig had not undergone any 10-year NDE inspection.

Item 1

1. Reason For The Deviation

The reason for the deviation was that CYAPCO did not effectively track or control commitments related to crane operator medical requirements.

2. Corrective Steps That Have Been Taken And The Results Achieved

Crane operators were evaluated for medical compliance to ANSI B30.2-1976. Eight people were found not to be physically qualified and removed from crane operator duties. The Medical Department established a data base to identify those Northeast Utilities employees that are crane operators. Examinations will be given every other year.

3. Corrective Steps That Will Be Taken To Avoid Further Deviations

WCM 2.2-9 "Control of Crane Operations" is being revised to include physical qualification of the crane operators. The Maintenance Department will revise the OJT (On-The-Job-Training) Guide to require verification of physical qualifications. These changes will be completed by September 30, 1996. (Commitment B15855-3)

The generic issue of commitment identification and control process is being evaluated and documented by the Configuration Management Program. This is a comprehensive review of the design and licensing bases of the Haddam Neck Plant and is scheduled for completion by December 1997.

4. Date When Corrective Action Will Be Completed.

CYAPCO is currently in full compliance since all designated crane operators meet the physical qualifications of ANSI B30.2-1976. The changes being made to Procedure WCM 2.2-9 "Control of Crane Operations" will assure continued compliance.

Item 2

1. Reason For The Deviation

The reason for the deviation was that CYAPCO did not effectively track or control commitments related to inspection of special lifting devices prior to use. It is not clear that the

commitment was initially captured and incorporated into a controlled document. Additionally, there was a lack of attention to detail in the procedure change process as well as in the procedure review and use process prior to performing work.

2. Corrective Steps That Have Been Taken And The Results Achieved

The PAB floor slab lift rig has been tagged "Caution - Do Not Use." Dedicated standard rigging components will be used for future lifts which conform to ANSI B30.9 per MA9.5-30.

3. Corrective Steps That Will Be Taken To Avoid Further Deviations

The commitment identification and control process is being evaluated and documented with the Configuration Management Program. This is a comprehensive review of the design and licensing bases of the Haddam Neck Plant and is scheduled for completion by December 1997.

Specific attention has been given to procedures which address inspection of special lifting devices. WCM 2.2-7, "PAB/Pipe Trench Floor Block Lifting Procedure" is being revised to designate the use of standard rigging components instead of the lift rig when lifting the floor blocks. This revision will be completed by October 31, 1996. (Commitment B15855-4)

The old lift rigs will be removed from service.

4. Date When Corrective Action Will Be Completed.

CYAPCO is currently in full compliance. The other special lifting devices are in full compliance with NUREG-0612.