



CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT

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

January 28, 1997

Re: 10CFR50.73(a)(2)(ii)

B#16201

U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D. C. 20555

Reference: Facility Operating License No. DPR-61  
Docket No. 50-213  
Reportable Occurrence LER 50-213/96-008-01

This letter forwards the Licensee Event Report 96-008-01, required to be submitted, pursuant to the requirements of the Haddam Neck Plant's Technical Specifications.

Very truly yours,

J. J. LaPlatney  
Unit Director

JJL/cah

Attachment: LER 50-213/96-008-01

cc: Mr. H. J. Miller  
Regional Administrator, Region I  
475 Allendale Road  
King of Prussia, PA 19406

Mr. William J. Raymond  
Sr. Resident Inspector  
Haddam Neck

IE221

9702050310 970128  
PDR ADOCK 05000213  
S PDR

|   |        |           |  |                     |                   |   |                  |                               |   |                     |
|---|--------|-----------|--|---------------------|-------------------|---|------------------|-------------------------------|---|---------------------|
| <b>NRC FORM 366</b><br>(4/95)   |        |           | <b>U.S. NUCLEAR REGULATORY COMMISSION</b>  |                     |                   | <b>APPROVED BY OMB NO. 3150-0104</b><br><b>EXPIRES 04/30/98</b><br><small>ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.</small> |                  |                               |   |                     |
| <h2 style="margin: 0;">LICENSEE EVENT REPORT (LER)</h2> <p style="margin: 5px 0;">(See reverse for required number of digits/characters for each block)</p>   |        |           |  |                     |                   |   |                  |                               |   |                     |
| <b>FACILITY NAME (1)</b><br><br>Haddam Neck   |        |           |  |                     |                   | <b>DOCKET NUMBER (2)</b><br><br>05000 - 213   |                  | <b>PAGE (3)</b><br><br>1 OF 4 |   |                     |
| <b>TITLE (4)</b><br><br>Removal of Floor Blocks Invalidates Internal Flooding Analysis  |        |           |  |                     |                   |   |                  |                               |   |                     |
| <b>EVENT DATE (5)</b>   |        |           | <b>LER NUMBER (6)</b>  |                     |                   | <b>REPORT DATE (7)</b>  |                  |                               | <b>OTHER FACILITIES INVOLVED (8)</b>          |                     |
| MONTH   | DAY    | YEAR      | YEAR   | SEQUENTIAL NUMBER   | REVISION NUMBER   | MONTH   | DAY              | YEAR                          | FACILITY NAME                                 | DOCKET NUMBER       |
| 04  | 18     | 96        | 96   | 008                 | 01                | 01  | 28               | 97                            |   | 05000               |
| <b>OPERATING MODE (9)</b><br>1  |        |           | <b>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)</b> |                     |                   |   |                  |                               |   |                     |
| <b>POWER LEVEL (10)</b><br>100  |        |           | 20.2201(b)   |                     | 20.2203(a)(2)(v)  |   | 50.73(a)(2)(i)   |                               | 50.73(a)(2)(viii)                             |                     |
| 1   |        |           | 20.2203(a)(1)  |                     | 20.2203(a)(3)(i)  |   | 50.73(a)(2)(ii)  |                               | 50.73(a)(2)(x)                                |                     |
| 100   |        |           | 20.2203(a)(2)(i)   |                     | 20.2203(a)(3)(ii) |   | 50.73(a)(2)(iii) |                               | 73.71   |                     |
| 100   |        |           | 20.2203(a)(2)(ii)  |                     | 20.2203(a)(4)     |   | 50.73(a)(2)(iv)  |                               | OTHER   |                     |
| 100   |        |           | 20.2203(a)(2)(iii)   |                     | 50.36(c)(1)       |   | 50.73(a)(2)(v)   |                               | Specify in Abstract below or in NRC Form 366A |                     |
| 100   |        |           | 20.2203(a)(2)(iv)  |                     | 50.36(c)(2)       |   | 50.73(a)(2)(vii) |                               | 50.73(a)(2)(vii)                              |                     |
| <b>LICENSEE CONTACT FOR THIS LER (12)</b>   |        |           |  |                     |                   |   |                  |                               |   |                     |
| <b>NAME</b>   |        |           |  |                     |                   | <b>TELEPHONE NUMBER (Include Area Code)</b>   |                  |                               |   |                     |
| <b>COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)</b>   |        |           |  |                     |                   |   |                  |                               |   |                     |
| CAUSE   | SYSTEM | COMPONENT | MANUFACTURER   | REPORTABLE TO NPRDS | CAUSE             | SYSTEM  | COMPONENT        | MANUFACTURER                  | REPORTABLE TO NPRDS                           | REPORTABLE TO NPRDS |
|   |        |           |  |                     |                   |   |                  |                               |   |                     |
|   |        |           |  |                     |                   |   |                  |                               |   |                     |
|   |        |           |  |                     |                   |   |                  |                               |   |                     |
| <b>SUPPLEMENTAL REPORT EXPECTED (14)</b>  |        |           |  |                     |                   | <b>EXPECTED SUBMISSION DATE (15)</b>  |                  | MONTH                         | DAY   | YEAR                |
| <b>YES</b><br>(If yes, complete EXPECTED SUBMISSION DATE).  |        |           |  |                     |                   | <b>NO</b>   |                  |                               |   |                     |
| YES   |        |           |  |                     |                   | NO  |                  |                               |   |                     |
| <b>ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)</b><br>On April 18, 1996, at 1500 hours, with the plant in Mode 1 at 100% power, Design Engineering personnel determined that the practice of removing floor blocks for the pipe trench in the Primary Auxiliary Building invalidates current internal flooding analysis conclusions. The areas affected include the Residual Heat Removal pit, the High Pressure Safety Injection/Low Pressure Safety Injection pump cubicle and the Charging pump cubicle. The floor block opening permits flooding of the trench which communicates with these cubicles. This unanalyzed condition could result in unacceptable water levels which could degrade the equipment in the above areas. On May 1, 1996, at 1358 hours, with the plant in Mode 1 at 100% power, an evaluation determined that this event was reportable as a historical condition since the floor blocks were in place at the time of discovery. On May 6, 1996 the floor block lifting procedure was changed to preclude lifting the blocks without an engineering evaluation. The cause of this condition was failure to establish administrative controls for the temporary removal of flood barriers. Corrective action consisted of evaluating the effects of flooding with a floor block removed and establishing compensatory measures during removal. This supplemental report provides the results of the engineering evaluation. |        |           |  |                     |                   |   |                  |                               |   |                     |

**REQUIRED NUMBER OF DIGITS/CHARACTERS  
FOR EACH BLOCK**

| BLOCK<br>NUMBER | NUMBER OF<br>DIGITS/CHARACTERS  | TITLE                        |
|-----------------|---|------------------------------|
| 1               | UP TO 46  | FACILITY NAME                |
| 2               | 8 TOTAL<br>3 IN ADDITION TO 05000   | DOCKET NUMBER                |
| 3               | VARIES  | PAGE NUMBER                  |
| 4               | UP TO 76  | TITLE                        |
| 5               | 6 TOTAL<br>2 PER BLOCK  | EVENT DATE                   |
| 6               | 7 TOTAL<br>2 FOR YEAR<br>3 FOR SEQUENTIAL NUMBER<br>2 FOR REVISION NUMBER             | LER NUMBER                   |
| 7               | 6 TOTAL<br>2 PER BLOCK  | REPORT DATE                  |
| 8               | UP TO 18 -- FACILITY NAME<br><br>8 TOTAL -- DOCKET NUMBER<br>3 IN ADDITION TO 05000   | OTHER FACILITIES INVOLVED    |
| 9               | 1   | OPERATING MODE               |
| 10              | 3   | POWER LEVEL                  |
| 11              | 1<br>CHECK BOX THAT APPLIES   | REQUIREMENTS OF 10 CFR       |
| 12              | UP TO 50 FOR NAME<br>14 FOR TELEPHONE   | LICENSEE CONTACT             |
| 13              | CAUSE VARIES<br>2 FOR SYSTEM<br>4 FOR COMPONENT<br>4 FOR MANUFACTURER<br>NPRDS VARIES | EACH COMPONENT FAILURE       |
| 14              | 1<br>CHECK BOX THAT APPLIES   | SUPPLEMENTAL REPORT EXPECTED |
| 15              | 6 TOTAL<br>2 PER BLOCK  | EXPECTED SUBMISSION DATE     |

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LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

| FACILITY NAME (1) | DOCKET          | LER NUMBER (6) |                      |                    | PAGE (3) |
|-------------------|-----------------|----------------|----------------------|--------------------|----------|
|                   |                 | YEAR           | SEQUENTIAL<br>NUMBER | REVISION<br>NUMBER |          |
| Haddam Neck       | 05000 --<br>213 |                |                      |                    | 2 OF 4   |
|                   |                 | 96             | 008                  | 01                 |          |

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

## BACKGROUND INFORMATION

The Haddam Neck plant was evaluated for the effects of internal flooding at the request of the Atomic Energy Commission in 1972. The Primary Auxiliary Building (PAB) was modified accordingly with flood barriers and liquid level alarms to protect safety related equipment. The PAB floor blocks were considered to be in place to limit the amount of water that could enter the pipe trench. In the past, PAB floor blocks were routinely removed to gain access to the pipe trench area.

Work Control Manual procedure WCM 2.2-7, "PAB/Pipe Trench Floor Block Lifting Procedure", provides guidelines in the removal and installation of floor blocks in the PAB and pipe trench commensurate with the requirements of NUREG-0612, "Control of Heavy Loads in Nuclear Power Plants" however, it does not address compensatory flood protection measures to ensure equipment operability is maintained while the blocks are removed.

## EVENT DESCRIPTION

On April 18, 1996, at 1500 hours, with the plant in Mode 1 at 100% power, Design Engineering personnel determined that the practice of removing floor blocks for the pipe trench in the Primary Auxiliary Building invalidates current internal flooding analysis conclusions. The internal flooding analysis of the PAB does not consider the effects of removing the floor blocks nor has it been revised to account for the change resulting from block removal. The areas affected include the Residual Heat Removal pit, the High Pressure Safety Injection/Low Pressure Safety Injection pump cubicle and the Charging pump cubicle. The floor block opening permits flooding of the trench which communicates with these cubicles. This unanalyzed condition could result in unacceptable water levels which could degrade the equipment in the above areas. On May 1, 1996, at 1358 hours, with the plant in Mode 1 at 100% power, an evaluation determined that this event was reportable as a historical condition since the floor blocks were in place at the time of discovery. On May 6, 1996 the floor block lifting procedure was changed to preclude lifting the blocks without an engineering evaluation.

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|                   |               | 96             | 008                  | 01                 |          |

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

## CAUSE OF THE EVENT

The cause of this condition was failure to establish administrative controls for the temporary removal of flood barriers.

## SAFETY ASSESSMENT

This event is reportable under 10CFR50.73(a)(2)(ii)(B) as a condition that was outside the design basis of the plant. Since this is a historical report a prompt report under 10CFR50.72 was not issued.

An engineering evaluation of the effects of flooding with the floor blocks removed was completed. The results indicate that the volume of water that would have accumulated in the primary auxiliary building, in the 12 minutes currently assumed for operator action to trip the service water pumps following a flooding alarm, would disable the residual heat removal (RHR) pumps.

If the plant was in Modes 1 or 2 there would have been no impact on achieving Mode 3.

If the plant was in Mode 3 there would have been no impact on achieving Mode 4.

The plant could have been maintained in Mode 4 using auxiliary feedwater and the charging system which would not have been affected by the internal flood. The RHR pit would be pumped out, necessary repairs made to either one of the RHR pump motors and the RHR system could be restored to permit entry into Mode 5.

If a simultaneous loss of offsite power occurred the emergency diesel generators would be unavailable due to the loss of service water. Emergency operating procedures for station blackout would be utilized to maintain the plant in Mode 4 until the affected service water header could be isolated.



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

| FACILITY NAME (1) | DOCKET         | LER NUMBER (6) |                   |                 | PAGE (3) |
|-------------------|----------------|----------------|-------------------|-----------------|----------|
|                   |                | YEAR           | SEQUENTIAL NUMBER | REVISION NUMBER |          |
| Haddam Neck       | 05000 -<br>213 |                |                   |                 | 4 OF 4   |
|                   |                | 96             | 008               | 01              |          |

TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

If a loss of RHR occurred in Modes 5 or 6 due to internal flooding the operators would use abnormal operating procedure AOP 3.2-12, "Loss of RHR System" and implement one of the mitigation strategies, depending upon plant conditions, to maintain core cooling until RHR could be restored.

Based upon the available alternate equipment and emergency and abnormal operating procedures, the plant could have been brought to and maintained in a safe shutdown condition following the postulated internal flooding event. Therefore, the safety significance of this event is judged to be low.

## CORRECTIVE ACTION

Corrective action consisted of evaluating the effects of flooding with a floor block removed and revising Work Control Manual procedure WCM 2.2-7, "PAB/Pipe Trench Floor Block Lifting Procedure" to establish compensatory measures during floor block removal.

In the original LER, Haddam Neck proposed developing barrier control guidance which would be integrated into the work control process to manage and control barrier issues more effectively. However, due to Haddam Neck's decision to permanently cease power operation, the barrier control program will not be implemented.

## ADDITIONAL INFORMATION

This supplemental report provides the results of the engineering evaluation of the effects of the postulated internal flooding. It also indicates that certain proposed corrective action is no longer required due to Haddam Neck's decision to permanently cease power operation.

## PREVIOUS SIMILAR EVENTS

LER 95-003-00, "Control Room High Energy Line Break Barrier Breached"