



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

August 14, 1996

The Honorable Sam Gejdenson  
United States House of Representatives  
Washington, D.C. 20515

Dear Congressman Gejdenson:

I would like to provide you a brief report on my recent trip to Northeast Utilities' (NU) Millstone Station and the Waterford area.

During my visit, I announced that the Commission will require that NU undertake an Independent Corrective Action Verification effort. The Commission today issued a Confirmatory Order to NU establishing an Independent Corrective Action Verification Program. A copy of the Order and its transmittal letter are enclosed for your information (Enclosure 1). This effort will provide additional information to the licensee, the public, and to the NRC that either the licensee's efforts and commitments necessary to restart the Millstone units are effective or that they are not yielding sufficient results. These results will be available to the public. I hope that the State of Connecticut will participate by observing the activities of the team.

I believe that the problems at Millstone can be resolved, but that the effort will require a safety conscious and dedicated attitude on the part of the Millstone operators and staff. The Commission is requiring the verification effort to ensure that NU management can now effectively address the problems at Millstone.

I also want to address the status of the Connecticut Yankee (or Haddam Neck) facility. Mr. James L. Milhoan and several other NRC officials visited the Haddam Neck site on August 1. He reported to me that the issues to be addressed prior to any restart of the reactor were sufficiently complex to delay prospective restart beyond any initially projected dates. On August 8, 1996, the licensee announced that they will begin the scheduled refueling outage early, rather than seek to restart the unit for an additional period of operation prior to the outage. The NRC staff has subsequently asked for additional information from the licensee regarding the Haddam Neck facility and a copy of the request is enclosed for your information (Enclosure 2).

Our respective staffs will continue to discuss the progress of NRC oversight of NU facilities.

Sincerely,

*Shirley Ann Jackson*

Shirley Ann Jackson

220036

DF02 1/1

Enclosures: As stated



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

August 14, 1996

The Honorable Joseph Lieberman  
United States Senate  
Washington, D.C. 20510

Dear Senator Lieberman:

I would like to provide you a brief report on my recent trip to Northeast Utilities' (NU) Millstone Station and the Waterford area.

During my visit, I announced that the Commission will require that NU undertake an Independent Corrective Action Verification effort. The Commission today issued a Confirmatory Order to NU establishing an Independent Corrective Action Verification Program. A copy of the Order and its transmittal letter are enclosed for your information (Enclosure 1). This effort will provide additional information to the licensee, the public, and to the NRC that either the licensee's efforts and commitments necessary to restart the Millstone units are effective or that they are not yielding sufficient results. These results will be available to the public. I hope that the State of Connecticut will participate by observing the activities of the team.

I believe that the problems at Millstone can be resolved, but that the effort will require a safety conscious and dedicated attitude on the part of the Millstone operators and staff. The Commission is requiring the verification effort to ensure that NU management can now effectively address the problems at Millstone.

I also want to address your letter of July 23, 1996, and my interim response of July 31, 1996, concerning the status of the Connecticut Yankee (or Haddam Neck) facility. Mr. James L. Milhoan and several other NRC officials visited the Haddam Neck site on August 1. He reported to me that the issues to be addressed prior to any restart of the reactor were sufficiently complex to delay prospective restart beyond any initially projected dates. On August 8, 1996, the licensee announced that they will begin the scheduled refueling outage early, rather than seek to restart the unit for an additional period of operation prior to the outage. The NRC staff has subsequently asked for additional information from the licensee regarding the Haddam Neck facility and a copy of the request is enclosed for your information (Enclosure 2).

Our respective staffs will continue to discuss the progress of NRC oversight of NU facilities.

Sincerely,

Shirley Ann Jackson

Enclosures: As stated



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

August 14, 1996

The Honorable Christopher J. Dodd  
United States Senate  
Washington, D.C. 20510

Dear Senator Dodd:

I would like to provide you a brief report on my recent trip to Northeast Utilities' (NU) Millstone Station and the Waterford area.

During my visit, I announced that the Commission will require that NU undertake an Independent Corrective Action Verification effort. The Commission today issued a Confirmatory Order to NU establishing an Independent Corrective Action Verification Program. A copy of the Order and its transmittal letter are enclosed for your information (Enclosure 1). This effort will provide additional information to the licensee, the public, and to the NRC that either the licensee's efforts and commitments necessary to restart the Millstone units are effective or that they are not yielding sufficient results. These results will be available to the public. I hope that the State of Connecticut will participate by observing the activities of the team.

I believe that the problems at Millstone can be resolved, but that the effort will require a safety conscious and dedicated attitude on the part of the Millstone operators and staff. The Commission is requiring the verification effort to ensure that NU management can now effectively address the problems at Millstone.

I also want to address your letter of July 23, 1996, and my interim response of July 31, 1996, concerning the status of the Connecticut Yankee (or Haddam Neck) facility. Mr. James L. Milhoan and several other NRC officials visited the Haddam Neck site on August 1. He reported to me that the issues to be addressed prior to any restart of the reactor were sufficiently complex to delay prospective restart beyond any initially projected dates. On August 8, 1996, the licensee announced that they will begin the scheduled refueling outage early, rather than seek to restart the unit for an additional period of operation prior to the outage. The NRC staff has subsequently asked for additional information from the licensee regarding the Haddam Neck facility and a copy of the request is enclosed for your information (Enclosure 2).

Our respective staffs will continue to discuss the progress of NRC oversight of NU facilities.

Sincerely,

Shirley Ann Jackson

Enclosures: As stated



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555-0001

August 14, 1996

Mr. Ted C. Feigenbaum  
Executive Vice President and  
Chief Nuclear Officer  
Northeast Nuclear Energy Company  
c/o Mr. Terry L. Harpster  
Director - Nuclear Licensing Services  
P.O. Box 128  
Waterford, CT 06385

SUBJECT: CONFIRMATORY ORDER ESTABLISHING INDEPENDENT CORRECTIVE ACTION  
VERIFICATION PROGRAM (EFFECTIVE IMMEDIATELY) - MILLSTONE NUCLEAR  
POWER STATION, UNITS 1, 2 AND 3

Dear Mr. Feigenbaum:

On August 12, 1996, the Nuclear Regulatory Commission (NRC) staff met with the staff of Northeast Nuclear Energy Company (NNECO) regarding programmatic weaknesses in design and configuration control at Millstone Nuclear Power Station, Units 1, 2, and 3. The NRC staff noted that NRC inspections and NNECO internal audits since 1991, have identified numerous configuration (design) control failures, failures to implement corrective actions for known problems, failures to implement quality assurance requirements and failures to comply with the terms and conditions of the operating licenses for all three Millstone plants. The NRC staff also noted that there have been indications of weaknesses in the NRC's oversight of the operation of the Millstone plants.

Accordingly, the NRC staff stated the need for an independent review to verify the adequacy of NNECO's efforts to establish adequate design bases and design controls, including translation of the design bases into operating procedures and maintenance and testing practices, verification of system performance, and implementation of modifications since issuance of the initial facility operating licenses.

By letter dated August 13, 1996, NNECO submitted its plan and commitments for such an independent review. NNECO's commitments included details regarding the scope of the independent review team's effort as described in the enclosed Order. Based on the magnitude of the failures at the Millstone units noted above, the NRC believes that NNECO's commitments must be confirmed by Order.

Therefore, the NRC is herewith issuing the enclosed Confirmatory Order Establishing Independent Corrective Action Verification Program (Effective Immediately). This Order states that the selection of the members of the Independent Corrective Action Verification Program (ICAVP) team and the team's plan for conduct of its reviews will be subject to NRC staff approval. In evaluating the independence of each team member, factors the NRC staff will

Enclosure 1

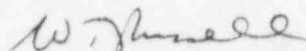
1608190092 JPP

consider will include, but not be limited to, whether the individual has prior involvement in design reviews for the licensee and whether the individual has any financial interest in Northeast Utilities. The Order also confirms the licensee's commitments regarding the scope of the ICAVP review.

In its letter of August 13, 1996, NNECO agreed that it would not take any Millstone unit critical until the Commission approves restart of the unit. As the staff noted during the meeting on August 12, 1996, the staff will follow the process outlined in the NRC's Inspection Manual Chapter 0350 to evaluate the licensee's actions directed toward resolving issues prior to restart of each unit. Conditions and/or actions the Commission may require of NNECO for restart will be the subject of future correspondence.

Please contact me if you have any questions or require further information on this matter.

Sincerely,



William T. Russell, Director  
Office of Nuclear Reactor Regulation

Docket Nos. 50-245, 50-336  
and 50-423

Enclosure: Order

cc w/encl: See next page



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	Docket Nos. 50-245, 50-336,
	)	and 50-423
NORTHEAST NUCLEAR ENERGY	)	License Nos. DPR-21, DPR-65,
COMPANY	)	and NPF-49
	)	
(Millstone Nuclear Power Station	)	
Units 1, 2, and 3)	)	

CONFIRMATORY ORDER ESTABLISHING  
INDEPENDENT CORRECTIVE ACTION VERIFICATION PROGRAM  
(EFFECTIVE IMMEDIATELY)

I

Northeast Nuclear Energy Company (Licensee) is the holder of Facility Operating License Nos. DPR-21, DPR-65, and NPF-49 issued by the Nuclear Regulatory Commission (NRC or Commission) pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 on October 31, 1986,<sup>1</sup> September 26, 1975, and January 31, 1986 respectively. The licenses authorize the operation of Millstone Units 1, 2 and 3 in accordance with conditions specified therein. All three facilities are located on the Licensee's site in Waterford, Connecticut.

II

On August 21, 1995, as supplemented August 28, 1995, the NRC received a petition under 10 CFR 2.206 which requested that NRC shut down Millstone Unit

---

<sup>1</sup>Millstone Unit 1 was issued its provisional operating license on October 7, 1970 and commenced operation on March 1, 1971. This unit received a full term operating license on October 31, 1986.

9608190094 17PP

1 and take enforcement action based upon alleged violations of NRC requirements related to operation of the spent fuel pool cooling systems and refueling practices. On November 4, 1995, the Licensee shut down Millstone Unit 1 for a planned 50-day refueling outage. During the fall of 1995, an NRC investigation of licensed activities at Millstone Unit 1 identified potential violations regarding refueling practices and the operation of the spent fuel pool cooling systems of Millstone Unit 1. On December 13, 1995, the NRC issued a letter to the Licensee requiring that it inform the NRC, pursuant to Section 182a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f), with regard to Millstone Unit 1, of the actions it would be taking to ensure that future operation of that facility would be conducted in accordance with the terms and conditions of the plant's operating license, the Commission's regulations, including 10 CFR 50.59, and the plant's Updated Final Safety Analysis Report (UFSAR).

On February 20, 1996, the Licensee shut down Millstone Unit 2 when both trains of the high pressure safety injection (HPSI) system were declared inoperable due to the potential to clog the HPSI discharge throttle valves during the recirculation phase following a loss-of-coolant accident (LOCA). On February 22, 1996, the Licensee issued Adverse Condition Report (ACR) 7007 - Event Response Team Report, which describes in detail the underlying causes for numerous inaccuracies contained in Millstone Unit 1's UFSAR. Those causes, as determined by the Licensee, include the following: 1) errors and omissions in the original 1986/87 UFSAR; 2) failure of the administrative control programs to address fully NRC requirements; 3) failure of the Licensee to implement fully those administrative programs; 4) a pattern of failure of Licensee management to correct identified weaknesses and risks associated with

the UFSAR and design bases; and 5) failure of Licensee oversight to identify this pattern to management, the significance of the pattern itself, or the ineffectiveness of corrective actions to prevent its recurrence. The report acknowledged that, due to the nature of these identified causes, the potential existed for the presence of similar configuration management problems at Connecticut Yankee and Millstone Units 2 and 3.

In response to the Licensee's ACR 7007 and the NRC's own ongoing inspections, evaluations and investigations, on March 7, 1996, the NRC issued a letter to the Licensee requiring that it inform the NRC, pursuant to Section 182a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f), with regard to Millstone Unit 2, of the actions it would be taking to ensure that future operation of that facility would be conducted in accordance with the terms and conditions of the plant's operating license, the Commission's regulations, including 10 CFR 50.59, and the plant's UFSAR. The letter stated that this information was to be submitted no later than 7 days prior to the Unit's restart (prior to criticality) from its current outage. The Millstone Unit 2 letter also described findings the NRC had made in recent inspections of that facility which suggested that significant operability and design concerns remained, including the HPSI issue identified above, as well as inadequate containment sump screen mesh and a flawed post-accident containment hydrogen monitor design.

On March 7, 1996, the NRC also issued a 50.54(f) letter to the Licensee regarding the Millstone Unit 3 plant, which was then operating at full power. In that letter, the NRC noted that it did not have an inspection history at Millstone Unit 3 that revealed design deficiencies similar in number and nature to that of Millstone Units 1 and 2. Nonetheless, the NRC concluded



that it required additional information, within 30 days of the date of the letter, including the Licensee's plans and actions to address the implications of ACR 7007 for Millstone Unit 3, as well as the Licensee's plans and schedules to ensure that future operation of the unit would be conducted in accordance with the Commission's regulations, the terms and conditions of the operating license, and the facility UFSAR.

Following the March 7 letter, the NRC conducted a special inspection at Millstone Unit 3 that identified design and other deficiencies similar to those reported in ACR 7007 and by the NRC at the other Millstone units. On March 30, 1996, Unit 3 was shut down after it was determined that containment isolation valves for the auxiliary feedwater (AFW) turbine-driven pump were inoperable due to the valves' noncompliance with NRC requirements. Shortly thereafter, while still shut down, the Licensee discovered that the facility had been operating in a condition outside its design basis due to the Licensee's failure to adequately address design temperature conditions in the stress calculations for the Containment Recirculation Spray System (RSS) piping and supports. Both of these deficiencies had existed for over ten years, since initial operation of the facility. All three Millstone Units remain shut down.

On April 4, 1996, the NRC issued a second letter to the Licensee, pursuant to 10 CFR 50.54(f), with regard to Millstone Unit 3, similar to those issued for Millstone Units 1 and 2. The letter described programmatic issues and design deficiencies identified during the NRC's ongoing special inspection of the plant that were similar in nature to those present at Millstone Units 1 and 2. These included the inoperability of the turbine-driven AFW pump during startup and shutdown, the failure to remove plastic shipping plugs from

Rosemount transmitters, the failure to correct a degraded non-safety battery, inadequate control of the modification of the service water system, and the potential for introduction of foreign material into the containment sump. In addition, the letter noted Licensee-identified design deficiencies in the AFW containment isolation valves and RSS that had existed for more than 10 years. As in the case of the Millstone Unit 1 and 2 letters, as described above, the Licensee was required to provide the NRC, no later than 7 days prior to the Unit's restart, with information necessary to assure the NRC that the plant will be operated in conformance with the terms and conditions of the plant's operating license, the Commission's regulations, including 10 CFR 50.59, and the plant's UFSAR.

On May 21, 1996, pursuant to 10 CFR 50.54(f), the NRC issued a letter to the Licensee requiring specific information regarding design and configuration deficiencies identified at each of the Millstone units as well as a detailed description of the Licensee's plans for completion of the work required to respond to the NRC's letters of December 13, 1995, March 7, 1996, and April 4, 1996. The NRC required this information to be submitted within 30 days of the date of the letter for the first unit that the Licensee proposed to restart and not later than 60 days prior to the Licensee's proposed restart for the remaining Millstone units.

Based upon the Licensee's assessment of the extent and scope of identified design control problems at Millstone Station, the Licensee decided to focus its near-term efforts on restart of Millstone Unit 3. In a letter dated June 20, 1996, the Licensee responded to the NRC's May 21, 1996, letter and informed NRC that Millstone Unit 3 would be the first Millstone unit the Licensee proposed to restart. In Attachment 1 to its June 20 response, the

Licensee listed 881 design and configuration deficiencies identified since issuance of ACR 7007 and entered into the Licensee's Deficiency Review Team Report database as of June 13, 1996. The Licensee designated 378 items to be corrected prior to restart of Millstone Unit 3. The Licensee determined that the items it had designated for correction prior to restart, if not corrected, could impact upon operability of required equipment, raise unreviewed safety questions, or indicate discrepancies between the plant's UFSAR and the as-built plant or operating procedures.

In the June 20 letter, the Licensee also described its own Configuration Management Plan (CMP), intended to provide reasonable assurance that the future operation of Millstone Units 1, 2, and 3 will be conducted in accordance with the terms and conditions of their applicable operating licenses, UFSARs and NRC regulations. The CMP includes efforts to understand licensing and design basis issues which led to issuance of the 50.54(f) letters and actions to prevent those issues' recurrence. Additionally, the Licensee described its CMP objective to clearly document and meet the units' licensing and design basis requirements, and its intention to ensure that adequate programs and processes exist to maintain control of licensing and design basis requirements.

On July 2, 1996, the Licensee supplemented its June 20, 1996 response to NRC's May 21, 1996 50.54(f) letter. The Licensee provided additional information on Millstone Unit 3 deficiencies previously reported, identified revisions to its plans and committed to complete a review to identify and correct, as necessary, Millstone Unit 3 UFSAR deficiencies prior to restart. The Licensee reported a substantial increase in the total number of identified design and configuration management discrepancies (1187 items), and an

increase in those proposed by the Licensee for corrective action prior to restart (597 items).

As the Licensee's own submissions and NRC inspections indicate, significant design control deficiencies and degraded and non-conforming conditions have been identified at Millstone Units 1, 2 and 3. The staff has identified three major types of design control problems which exist at all three Millstone plants. Specific examples of deficiencies at each plant in each of the categories are provided below.

1. Errors in Licensing/Design Basis Documentation

The NRC identified errors in the UFSARs for Millstone Units 1, 2, and 3. For example, at Millstone Unit 3, the protective relay settings and calculations for 4kv safety-related motor feeders were not set consistent with the UFSAR. At Millstone Unit 2, the UFSAR indicated that certain non-essential loads of the reactor building closed cooling water (RBCCW) system inside containment were automatically isolated during a sump recirculation actuation signal when in fact the associated isolation valves received no automatic isolation signal. Additionally, the RBCCW flow rates assumed in the accident analyses were non-conservative with respect to the actual system flow rates.

In addition, the NRC found instances of modifications that were completed without implementing required revisions to the UFSAR. For example, the Licensee revised the Millstone Unit 3 Technical Specifications (TS) in January 1995 to change the testing frequency of the auxiliary feed pumps from monthly to quarterly, but did not update the UFSAR to reflect the change.

At Unit 1, the Licensee failed to perform and document a safety evaluation for an electrical separation deficiency associated with a feedwater regulating valve interlock. This deficiency was not corrected and constituted a change to the design of the facility as described in the UFSAR. Also, the Licensee's assessment of the need for upgrades to the intake structure ventilation system was inadequate. Specifically, insufficient heat removal capability existed under several postulated scenarios.

At Unit 2, the NRC found that the UFSAR had not been updated to reflect that the intake structure design temperature could not be met following a loss of non-vital exhaust fans.

Furthermore, while the Millstone Unit 3 UFSAR documented that the design bases for the containment heat removal systems had been established in accordance with specific general design and code criteria, portions of these systems were found to violate certain analytical stress considerations. Specifically, the recirculation spray system (RSS) pipe supports inside containment were not designed to withstand a single failure of a supporting service water train. Also, both the RSS and quench spray systems were found to contain pipe supports for which ASME Code stress allowables would be exceeded during design basis accident temperature conditions within the Unit 3 containment building.

2. Failure to Translate Design Bases to Procedures and Hardware

The NRC found instances where the Licensee did not adequately translate design basis information into procedures, practices, hardware and drawings. For example, at Millstone Unit 1, the reactor pressure assumed as an initial condition in the accident analyses was exceeded during reactor power operation. At Unit 3, a modification that installed the service water intake structure sump pump called for specific periodic testing, but such testing was never performed. In another case at Unit 3, prelubrication of the AFW pump was not performed every 40 days as required by the vendor.

As noted in the NRC's letter of December 13, 1995, at Millstone Unit 1, the Licensee's core offload practices were not consistent with the Unit's UFSAR. Specifically the heat load assumptions were not maintained as a result of full core offloads performed sooner than the required delay time after reactor shutdown.

Also at Unit 1, measures established to ensure that the design bases were satisfied for control room habitability were not adequate in that the means for maintaining viable self-contained breathing apparatus capability for each person in the control room were not translated into procedures. In addition, the Licensee failed to translate the design bases for the Unit 1 standby gas treatment system (SGTS) into design specifications, and failed to perform comprehensive pre-operational testing of the SGTS to ensure that it met its design specifications.

At Millstone Unit 2, the Licensee failed to adequately update the surveillance requirements to reflect modifications to contact positions in the anticipated transient without scram (ATWS) mitigating system actuating circuitry. Also at Unit 2, the procedure requirements for the time of initiation of hydrogen monitoring following a LOCA were not consistent with the licensing and design bases.

In addition, there were a number of instances where the original design basis was inadequate or the original installation was



incorrect. For example, at Units 2 and 3, the Licensee failed to remove plastic shipping plugs from Rosemount transmitters prior to installation, notwithstanding the vendor's instructions which required those plugs' replacement with stainless steel plugs. At Unit 2, the NRC found that nuclear instrumentation and post-LOCA hydrogen monitors were not single-failure proof.

At Millstone Unit 2, the Licensee's inspection of the containment sump screen mesh revealed that debris larger than the size specified in the design basis could pass through with potential adverse consequences to the operability of the emergency core cooling systems. The NRC also identified that the post-accident containment hydrogen monitor design at Millstone Unit 2 was flawed in that insufficient sample flow would be available at low containment pressures when the monitor must be operable.

Also at Unit 2, when it was found that postulated failures of the non-vital intake structure ventilation systems could cause the intake structure ambient temperature to exceed the design basis, the Licensee did not perform appropriate evaluations relative to the design basis before concluding that no modifications to equipment or the design basis were needed.

### 3. Inadequate Engineering and Modifications

The NRC identified a number of instances in which a modification was not installed in accordance with the design, a modification was inadequate, or a modification was based on incorrect design assumptions. In one example at Millstone Unit 1, the Licensee failed to maintain the design bases for the loss of normal power (LNP) logic. Specifically, a modification resulted in a single failure vulnerability of the LNP logic that would have prevented both emergency power sources from properly starting and sequencing the required loads. The Licensee also revised the Unit 1 maximum spent fuel pool temperature through an amendment to the Technical Specifications but failed to evaluate the impact of the change on the SGTS.

At Millstone Unit 2, both trains of service water were rendered inoperable when the strainer backwash line froze due to an undocumented modification that extended the backwash line through an opening under the wall to a point just outside the intake structure.

Also at Millstone Unit 2, the NRC identified that both trains of the post-accident sampling system have been inoperable since the steam generator replacement modification because higher containment pressures would have delayed taking a containment sample for 24 hours.

At Millstone Unit 3, the Licensee prepared a modification package for the high pressure safety injection thermal relief valves which relied on incorrect design assumptions because a previous modification had revised the design. In addition, the Licensee had no approved calculation to demonstrate the adequacy of the station blackout diesel generator battery at Millstone Unit 3.

Although the Licensee's own programs, such as the CMP, are intended to correct existing and prevent future deficiencies at the facilities, I have concluded that these programs by themselves are not sufficient, given the Licensee's history of poor performance in ensuring complete implementation of corrective action for both known degraded and non-conforming conditions and past violations of NRC requirements. In addition, the magnitude and scope of the design and configuration deficiencies currently being identified indicate multiple significant failures to comply with NRC regulations (e.g., 50.59, 50.71(e), etc.) The Licensee's history of poor performance, coupled with the magnitude and scope of its failure to maintain and control conformance of Millstone Units 1, 2, and 3 to their design bases, require resolution prior to plant restarts.

The extent and duration of the deficiencies identified also indicate ineffective implementation of the Licensee's oversight programs, including the NRC-approved quality assurance (QA) program. Effective oversight activities should have identified and led to corrective measures for design control deficiencies. One conclusion of ACR 7007 was that the Licensee's oversight organizations (Review Boards, Quality Assessment Section (QAS), Independent Safety Engineering Group, and Operating Experience) did not identify the pattern of Millstone Unit 1 UFSAR discrepancies to management; nor did they identify the significance of the pattern, or the effectiveness of corrective actions to prevent recurrence. In a July 2, 1996 letter to the NRC, the

Licensee provided the preliminary findings of an independent Root Cause Evaluation Team chartered to determine the causes for these oversight failures. The team found that there was no history of escalating issues effectively and that QAS operated in an environment that did not lend itself to resolution of QAS-identified problems. Such findings of program weaknesses that represent poor oversight functions are not recent. It is apparent that the Licensee was aware of significant weaknesses in its oversight functions as early as 1991 and took no effective actions to correct those weaknesses. The Licensee's Performance Task Group Final Report, issued in September 1991, and Procedure Compliance Task Force Final Report, issued in October 1991, identified significant programmatic weaknesses affecting configuration management that either went unnoticed or were not corrected by the Licensee oversight functions.

It is necessary to ensure that the Licensee's programs to correct design control failures at Millstone Units 1, 2 and 3 are effective and that identification of degraded and non-conforming conditions and implementation of corrective actions are satisfactory and can effectively preclude repetition of these failures. For this reason, the NRC requires an independent verification of the adequacy of the results of the programs currently being implemented by the Licensee which are directed at resolving existing design and configuration management deficiencies. Accordingly, the Commission in this Order directs the Licensee to obtain the services of an organization, independent of the Licensee and its design contractors, to conduct a multi-disciplinary review of Millstone Units 1, 2, and 3. The review is to provide independent verification that, for the selected systems, the Licensee's CMP has identified and resolved existing problems, documented and utilized licensing and design

bases, and established programs, processes and procedures for effective configuration management in the future. This review must be comprehensive, incorporating appropriate engineering disciplines, such that the NRC can be confident that the Licensee has been thorough in identification and resolution of problems.

### III

On August 12, 1996, a transcribed meeting was conducted between the Licensee and the NRC staff regarding this matter. In response to the staff's concerns, the Licensee subsequently submitted a letter dated August 13, 1996, in which it agreed and committed to take a number of actions with respect to Millstone Units 1, 2, and 3. Specifically, the Licensee committed to have an independent team conduct an Independent Corrective Action Verification Program (ICAVP) at Millstone Units 1, 2, and 3. The Licensee committed that the corrective action verification program will include: (1) conduct of an in-depth review of selected systems which will address control of the design and design basis since issuance of the operating license for each unit; (2) selection of systems for review based on risk/safety based criteria similar to those used in implementing the Maintenance Rule (10 CFR 50.65); (3) development and documentation of an audit plan that will provide assurance that the quality of results of the Licensee's problem identification and corrective action programs on the selected systems is representative of and consistent with that of other systems; (4) procedures and schedules for parallel reporting of findings and recommendations by the ICAVP team to both the NRC and the Licensee; and (5) procedures for the ICAVP team to comment on

the Licensee's proposed resolution of the findings and recommendations. The Licensee also committed to the scope of the ICAVP review, encompassing modifications to the selected systems since initial licensing, including: (1) a review of engineering design and configuration control processes; (2) verification of current, as-modified plant conditions against design basis and licensing basis documentation; (3) verification that design and licensing bases requirements are translated into operating procedures, and maintenance and test procedures; (4) verification of system performance through review of specific test records and/or observation of selected testing of particular systems; and (5) review of proposed and implemented corrective actions for Licensee-identified design deficiencies.

I find that the Licensee's agreements and commitments as set forth in its letter of August 13, 1996 are acceptable and necessary.

In view of the foregoing, I have determined that public health and safety require that the Licensee's agreements and commitments in its August 13, 1996 letter be confirmed by this Order. The Licensee has agreed to this action. Pursuant to 10 CFR 2.202, I have also determined, based on the significance of the matters described above, as well as on the Licensee's consent, that the public health and safety require that this Order be immediately effective.

#### IV

Accordingly, pursuant to Sections 103, 104, 161b, 161i, 161o, 182 and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR 2.202 and 10 CFR Part 50, IT IS HEREBY ORDERED, EFFECTIVE IMMEDIATELY, THAT:



1. The Licensee shall implement an Independent Corrective Action Verification Program (ICAVP) for each Millstone Unit to confirm that the plant's physical and functional characteristics are in conformance with its licensing and design bases. The ICAVP review shall begin after the Licensee has completed the problem identification phase of the CMP, including the activities of the QA organization. The ICAVP shall be performed and completed for each Unit, to the satisfaction of the NRC, prior to the Unit's restart.

2. The ICAVP is to be conducted by an independent verification team whose selection must be approved by the NRC. The ICAVP team shall provide input on its findings on an ongoing basis concurrently to both the Licensee and the NRC. The ICAVP team shall also periodically provide to the NRC its comments on the Licensee's proposed resolution of the team's findings and recommendations.

3. The ICAVP team shall provide for NRC review and approval, prior to implementation, a plan for the conduct of the team's review. The plan must describe (a) the conduct of an in-depth review of selected systems' design and design bases since issuance of the facilities' operating licenses; (b) risk/safety based criteria for selection of systems for review; (c) a description of the audit plan to provide assurance that the quality of results of the Licensee's problem identification and corrective action programs on the selected systems is representative of and consistent with that of other systems; (d) procedures and schedules for parallel reporting of findings of the ICAVP team to both the NRC and the Licensee; and (e) procedures for the ICAVP team to comment on the Licensee's proposed resolution of the team's findings and recommendations. The scope of the ICAVP effort shall encompass all modifications made to the selected systems since initial licensing, and

shall include: (1) review of engineering design and configuration control processes, (2) verification of current, as-modified conditions against design and licensing basis documentation, (3) verification that the design and licensing bases requirements have been translated into operating procedures, and maintenance and test procedures, (4) verification of system performance through review of specific test records and/or observation of selected testing, and (5) review of proposed and implemented corrective actions for licensee-identified design deficiencies.

4. The Licensee shall provide written replies to the Regional Administrator, Region I and the Director, Office of Nuclear Reactor Regulation, addressing ICAVP team findings and recommendations discussed in reports made pursuant to item 3(d) above. The Licensee's written replies to ICAVP team findings and recommendations shall include a statement of agreement or disagreement with reasons for each ICAVP finding or recommendation, and of the status of implementation of corrective actions. Subsequent written replies shall be made until all corrective actions are implemented.

The Director, Office of Nuclear Reactor Regulation, may, in writing, relax or rescind this order upon demonstration by the Licensee of good cause.

V

The Licensee has, as described above, consented to the issuance of this Order and waived its right to request a hearing. Thus, any person adversely affected by this Order, other than the Licensee, may request a hearing within 20 days of its issuance. Where good cause is shown, consideration will be given to extending the time to request a hearing. A request for extension of


time must be made in writing to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, and include a statement of good cause for the extension. Any request for a hearing shall be submitted to the Secretary, U.S. Nuclear Regulatory Commission, ATTN: Chief, Docketing and Service Section, Washington, D.C. 20555. Copies of the hearing request shall also be sent to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, to the Assistant General Counsel for Hearings and Enforcement at the same address, to the Regional Administrator, NRC Region I, 475 Allendale Road, King of Prussia, PA 19406-1415, and to the Licensee. If such a person requests a hearing, that person shall set forth with particularity the manner in which his interest is adversely affected by this Order and shall address the criteria set forth in 10 CFR 2.714(d).

If a hearing is requested by a person whose interest is adversely affected, the Commission will issue an Order designating the time and place of any hearings. If a hearing is held, the issue to be considered at such hearing shall be whether this Confirmatory Order should be sustained.

In the absence of any request for hearing, or written approval of an extension of time in which to request a hearing, the provisions specified in Section IV above shall be final 20 days from the date of this Order without further order or proceedings. If an extension of time for requesting a hearing has been approved, the provisions specified in Section IV shall be

final when the extension expires if a hearing request has not been received.  
AN ANSWER OR A REQUEST FOR HEARING SHALL NOT STAY THE IMMEDIATE EFFECTIVENESS  
OF THIS ORDER.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script, appearing to read "W. Russell".

William T. Russell, Director  
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland  
this 14th day of August, 1996



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

August 9, 1996

Mr. Ted C. Feigenbaum  
Executive Vice President and  
Chief Nuclear Officer  
Northeast Utilities Service Company  
c/o Mr. Terry L. Harpster  
Director - Nuclear Licensing Services  
P. O. Box 128  
Waterford, CT 06385

Dear Mr. Feigenbaum:

On May 17, 1996, the NRC issued a letter pursuant to 10 CFR 50.54(f), to Northeast Utilities (NU) requiring NU to provide (among other information) its basis for concluding that continued operation of Haddam Neck was acceptable in light of the generic problems with design control as identified in NU's report, titled "ACR 7007 - Event Response Team Report." Your reply of May 30, 1996 as supplemented June 28, 1996, provided NU's basis for continued operation of Haddam Neck.

On July 23, 1996, the Haddam Neck Plant was shut down in accordance with the requirements of the technical specifications when it was determined that the containment air recirculation (CAR) system was inoperable due to a design deficiency involving the service water system and the CAR system. My July 24, 1996, letter to you, summarizing our conversation of July 23, discussed additional technical issues related to containment cooling, containment isolation, and reliance on containment pressure for net positive suction head of emergency core cooling system pumps while recirculating water from the containment sump.

Subsequent to the July 23, 1996 shutdown, additional design deficiencies have been identified or further evaluated and determined to affect operability of systems or components. These deficiencies involve feedwater isolation components, the service water system, and the emergency core cooling system. Your staff has informed the NRC during on-site inspections and conference calls that hardware and procedure modifications will be required to correct some of the identified deficiencies to ensure safety systems are capable of satisfying their functional requirements.

On July 31, 1996, I sent you NRC Inspection Report (IR) 50-213/96-201 documenting the results of a special inspection of the Haddam Neck Plant. Among the issues addressed in this inspection report were design and configuration deficiencies that were not addressed in your May 30 and June 28, 1996 letters.

On August 7, 1996, we discussed by telephone a number of recently identified safety concerns (for example, the condition of the containment sump screen and the failure to have tested the containment penetration associated with the

Enclosure 2

9608130001 2PP



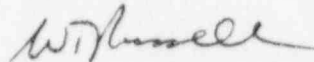
fuel transfer tube bellows) that raise questions as to the operability of important structures, systems, and components and thereby raise questions about continued operation of Haddam Neck.

The NRC requires additional information to be submitted in writing pursuant to Section 182a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f), under oath or affirmation, to determine whether or not the license for Haddam Neck should be suspended, modified or revoked. You are required to update and resubmit your basis for continued operation of Haddam Neck and address the implications of NRC and NU identified degraded and non-conforming conditions requiring corrective action (i.e., facility and/or procedure modification or safety reanalysis) to meet the Haddam Neck Plant's design basis. As you proposed, this is to be submitted within 30 days of the date of this letter.

The predecisional enforcement conference referred to in my letter of July 31, 1996, will be scheduled following our review of your response to this letter.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and your responses will be placed in the NRC Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC and in the local public document room.

Sincerely,



William T. Russell, Director  
Office of Nuclear Reactor Regulation

Docket No. 50-213

cc: See next page