Northeast
Utilities System

107 Selden Street, Berlin, CT 06037

Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270
(860) 665-5323

Ted C. Feigenbaum
Executive Vice President and
Chief Nuclear Officer

June 20, 1996
Docket No. 50-423
B15765

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

Millstone Nuclear Power Station, Unit No. 3
Response to May 21, 1996 10CFR50.54(f) Letter

Reference (a):	W. T. Russell, Nuclear Regulatory Commission letter to R. E. Busch, dated May 21, 1996
Reference (b):	W. T. Russell, Nuclear Regulatory Commission letter to R. E. Busch, dated December 13, 1995
Reference (c):	W. T. Russell, Nuclear Regulatory Commission letter to R. E Busch, dated March 7, 1996
Reference (d):	W. T. Russell, Nuclear Regulatory Commission letter to R. E. Busch, "Preliminary Inspection Findings," dated April 4, 1996
Reference (e):	F. R. Dacimo letter to the Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 1 - Submittal of ACR 7007 - Event Response Team Report, dated March 8, 1996
Reference (f):	T. C. Feigenbaum letter to W. T. Russell, Nuclear Regulatory Commission, dated May 31, 1996
Reference (g):	W. D. Lanning, Nuclear Regulatory Commission letter to T. C. Feigenbaum, "NRC Combined Inspection 50-245/96-04; 50-336/96-04; 423/96-04 and Notice of Violation," dated June 6, 1996

In a letter dated May 21, 1996 [Reference (a)], the NRC requested that, within 30 days, Northeast Utilities (NU) submit, for the first Millstone unit to be restarted, a detailed description of our plans to complete the work required to respond to NRC letters dated December 13, 1995, March 7, 1996, and April 4, 1996 [References(b), (c) and (d)] This response provides that information for Millstone 3 which is the first of the units that we propose to return to operation.

This letter and its attachments describe our efforts to identify and correct design and configuration management deficiencies at Millstone 3. The results of our efforts will be addressed in a future submittal. We have not included a restart schedule in this response. We will address restart only after senior management is satisfied that sufficient progress and improvements in the fundamental personnel and cultural areas as well as in processes, programs, and hardware have been made. When we reach that point, we will submit our notification to the NRC of our estimated date for the restart of Millstone 3.

In early July 1996, we will submit the Millstone 3 Operational Readiness Plan (ORP) which will delineate the Millstone 3 restart criteria and restart deliverables and checklists. The ORP will include the configuration management issues; Millstone 3 Key Performance Indicators that are being developed to measure long-term performance improvement; an update of the Status Report of Design and Configuration Deficiencies (Attachment 1) reflecting the results of the configuration management activities; and the results of the design and configuration management reviews for Millstone 3.

In a subsequent submittal(s), we will provide the Nuclear Excellence Plan; the bases for Millstone 3's readiness for the NRC Operational Safety Team Inspection/Readiness Assessment Team Inspection (OSTI/RATI); a response to the NRC's June 6, 1996 letter [Reference (g)] that will describe the improvements being made to Millstone's capability to correct identified deficiencies; and a response to the NRC special inspection team report once it is issued. Finally, at least 7 days before the proposed restart of Millstone 3, we will provide a submittal describing readiness for restart including actions taken to ensure that future operation of Millstone 3 will be conducted in accordance with the license, Commission regulations and the Final Safety Analysis Report (FSAR).

This letter consists of five sections. **Section I** summarizes and provides background information on the NRC letters that we are responding to in this submittal. **Section II** discusses the objectives of this submittal and how the programs that are designed to correct the design and configuration management deficiencies fit into the overall framework of our efforts to resolve the management and cultural issues at Millstone Station. **Section III** describes the list of design and configuration deficiencies provided in Attachment 1. **Section IV** describes the Configuration Management Plan (CMP) which, through a number of ongoing programmatic and plant system assessments, reviews and physical walkdowns, is our vehicle for identifying and correcting the design and configuration management deficiencies at Millstone. Finally, the Nuclear Safety and Oversight plan, which will be used to confirm that Millstone 3 is ready for restart, is presented in **Section V.**

I. Background

In a letter dated December 13, 1995 [Reference (b)], the NRC cited refueling operations at Millstone 1 that may have been conducted in a manner inconsistent with the Updated Final Safety Analysis Report (UFSAR) and in violation of the operating license. As part of its response, NU established an event response team to determine the cause of the Millstone 1 UFSAR inaccuracies. Its conclusions were contained in Adverse Condition Report (ACR) 7007 - Event Response Team Report, an internal report which NU formally submitted to the NRC on March 8, 1996 [Reference(e)]. Although ACR 7007 was an assessment of the Millstone 1 UFSAR inaccuracies, it noted the potential for similar configuration management deficiencies at the other Connecticut units.

Another NRC letter was issued on March 7, 1996 [Reference(c)] which requested that, within 30 days, NU describe the actions taken and future plans to address ACR 7007's conclusions with respect to Millstone 3. It also required that NU's written response include plans and a schedule for ensuring that future operations of Millstone 3 would be conducted in accordance with the terms and conditions of its operating license, Commission regulations, including 10 CFR 50.59, and the Millstone 3 Final Safety Analysis Report (FSAR).

In the March 7 letter, the NRC stated that it did not have a recent inspection history or findings of similar deficiencies at Millstone 3. Several subsequent events, however, collectively led the NRC to conclude in an April 4, 1996 letter [Reference(d)] that programmatic issues and design deficiencies similar to those identified at Millstone 1 did, in fact, exist at Millstone 3. First, the NRC conducted a special inspection that identified programmatic issues and design deficiencies comparable to those reported in ACR 7007 and by the NRC at the other Millstone units. Then, on March 30, control room operators brought Millstone 3 to a cold shutdown condition after determining that the containment isolation valves for the Auxiliary Feedwater (AFW) turbine pump were declared inoperable because they were not in compliance with NRC regulations. Several days later, while still shutdown, NU discovered that the plant had been operated in a condition outside its design basis as a result of our failure to accurately consider design temperature conditions for the Containment Recirculation System (RSS) spray piping and support loading calculations. Both of these conditions had existed since initial operation.

In the April 4 letter, the NRC requested that, no later than seven days prior to restart, NU should describe the actions it has taken to ensure that future operations of Millstone 3 will be conducted in accordance with the terms and conditions of the license, the Commission's regulations and the FSAR. The NRC also specifically directed NU to describe the actions taken to identify, evaluate and correct the configuration management deficiencies. Finally, it stated that the AFW and RSS design deficiencies as well as five items identified during the NRC special inspection would have to be resolved to the NRC's satisfaction prior to restart. In the letter, dated June 6, 1996, [Reference (g)], the NRC concluded that the Millstone corrective action program has

been ineffective in correcting identified deficiencies and must be demonstrated to be effective before restart.

II. Discussion

Consistent with the NRC's request in Reference (a), this response provides a comprehensive list of the design and configuration deficiencies (Attachment 1) identified after issuance of the ACR 7007 Report. It also describes, in response to References (a) through (d), the Configuration Management Plan (CMP) (Attachment 2) and the actions being taken under its auspices to:

- ensure that design and configuration management deficiencies at Millstone 3 have been identified and evaluated with regard to plant operability, the existence of unreviewed safety questions, and reportability;
- address design and configuration management deficiencies;
- ensure that future operation of Millstone 3 will be conducted in accordance with the terms and conditions of the operating license, the Commission's regulations, including 10 CFR 50.59, and the Final Safety Analysis Report (FSAR); and
- address the conclusions of the ACR 7007 Report as it pertains to Millstone 3.

The methods that we are using to identify, understand, resolve and determine the collective significance of design and configuration management deficiencies are found in the CMP. The CMP is also being used to develop methods and programs that will prevent their recurrence. Accordingly, a discussion of the CMP will be the focus of the majority of this letter.

Many of the CMP activities that will be discussed are complete or well underway. We will be carefully evaluating the results of each individual element of the plan to determine their collective significance. Based on these results, we will make any changes to operational readiness efforts that may be necessary. The effectiveness of our corrective actions and programmatic improvements are being evaluated by the NU Nuclear Safety and Oversight (NS&O) organization.

The CMP will be a part of the Nuclear Excellence Plan (NEP). The NEP contains pre- and post-restart improvement initiatives. It will encompass the planned and ongoing initiatives that address the performance of the NU nuclear organization. These include the Improving Station Performance (ISP) initiatives and additional initiatives to achieve nuclear excellence. Preserving the Operational Excellence Objectives established by nuclear management in 1994, the NEP will address major issues such as Employee Concerns, leadership development, the corrective action program, the self-assessment program, work control and the Procedures Upgrade Program. It also will integrate

those activities necessary to provide NU management with the confidence to propose restart of the Millstone units with the additional long-term initiatives that will ultimately achieve and sustain nuclear excellence. We currently have activities underway to address leadership development, employee concerns and the corrective action program, as discussed in Reference (f).

We are establishing a Leadership Development program as an investment in our most important resource, the people of NU. It establishes the foundation for an environment of trust where every employee and manager understands their personal responsibility to excellence and holds themselves accountable for it. This program is designed to provide a foundation of skills and behaviors in individual, interpersonal, teaming, managerial, and organization areas. This program is scheduled to be implemented at Millstone 3 beginning the week of July 8, 1996.

Included within the NEP's overall planning framework will be the Millstone operational readiness action requirements. Millstone 3 will have an Operational Readiness Plan that will delineate all of the actions and steps necessary to restart the unit. These consist of the normal requisites for restart following an extended shutdown such as a review of plant materiel condition and upgrades, plant testing, hardware modifications, and backlog areas, as well as the resolution of the configuration management issues that are set forth in the Configuration Management Plan detailed in Section IV below.

III. List of Design and Configuration Deficiencies

Attachment 1 provides a comprehensive list of Millstone 3 design and configuration deficiencies identified since issuance of ACR 7007 and entered into in the Deficiency Review Team Report database as of June 13, 1996. NU is updating this list as issues are identified as a result of the ongoing reviews. Items that are generated or identified during implementation of the Operational Readiness Plan will be added to the list.

As requested by the NRC, for each item on the list, we have provided where possible: 1) the date that the deficiency was identified, 2) how the deficiency was identified, 3) how long the deficiency existed prior to its identification and if it was previously known, but not corrected, when it was first known and, 4) the corrective action taken or planned to be taken.

The priorities that are assigned to each item are indicated in the "Estimated Completion" column. Items that indicate "Startup" in this column have been preliminarily designated to be completed before restart. Restart criteria will be provided in the Operational Readiness Plan. The startup designation will be applied to all items that impact plant operability, raise an unreviewed safety question, or indicate a discrepancy between the FSAR and the as-built plant or an operating procedure. Items on the list will be evaluated, appropriately prioritized, and dispositioned. We will periodically submit an updated list to the NRC.

IV. Configuration Management Plan

The Configuration Management Plan (CMP) and its associated implementing procedures or Project Instructions (PIs) (Attachment 2) deal primarily with design and configuration management issues for the Connecticut units. The CMP mission is to provide reasonable assurance that the future operation of each unit will be conducted in accordance with the terms and conditions of the unit's operating licenses, NRC regulations, and the FSAR. We have designed the CMP so that upon its completion, there will be reasonable assurance that each of the following three objectives will be achieved:

CMP Objective 1: Conditions related to licensing and design basis issues leading to the 10 CFR 50.54(f) letters are understood and actions to prevent recurrence have been implemented or committed to in a prioritized manner.

CMP Objective 2: The licensing and design basis requirements are clearly documented and are being met.

CMP Objective 3: Adequate programs and processes exist to maintain control of these requirements on a going forward basis.

Management involvement in CMP activities includes a full time project manager for each Millstone unit and two major management committees that oversee CMP activities. An Executive Committee chaired by the Executive Vice President and Chief Nuclear Officer provides overall leadership and ensures that senior management expectations are being satisfied. To ensure adequate quality and thoroughness of CMP implementation, each unit is utilizing a Management Quality Committee (MQC). The Millstone 3 MQC is comprised of the Unit Director (Co-Chairman), the Director of Design Engineering (Co-Chairman), a Nuclear Licensing representative, a Nuclear Safety and Oversight representative, and the Unit CMP Project Manager. The MQC reviews the CMP implementation, provides leadership for the unit-specific effort and ensures focus and direction are maintained in accordance with the CMP.

The CMP is being implemented in a two-phased approach at Millstone 3. Phase 1 includes the activities necessary to respond to the NRC's information requests as provided in References (a) through (d). Phase 2 includes the long-term tasks that will result in improvements and clarifications of our licensing and design bases.

The specific activities designed to accomplish the Phase 1 CMP objectives are described below. If significant deficiencies are found, e.g., if it is determined that the improved programs, processes and procedures will not prevent recurrence of past deficiencies, the CMP will be revised in order to directly assess and resolve both the specific items identified and their generic implications. The overall CMP completion criteria is presented following the discussion of these objectives.

CMP OBJECTIVE 1: Conditions related to licensing and design basis issues leading to the 10 CFR 50.54(f) letters are understood and actions to prevent recurrence have been implemented or committed to in a prioritized manner

An Assessment Team will perform an analysis of each of the Millstone units in accordance with PI 2, "Unit Specific Assessments" to determine the reasons for:

- issues identified by the recent NRC special team inspection;
- self-identified recent-term issues;
- process, license, and design basis issues documented in key assessments over at least the past two years, including (but not limited to) items contained in reports issued by Independent Safety Engineering Group, Institute for Nuclear Power Operations, Quality Assessment Services, and the NRC; and
- issues identified in ACR 7007 that are applicable to each unit.

An important part of the assessment being conducted in accordance with PI 2 is to determine the extent to which configuration management deficiencies exist at Millstone 3. The adequacy of the Millstone 3-specific CMP scope to correct these deficiencies will be evaluated and modifications implemented, if necessary. Following completion of the unit specific assessments for all of the Millstone units, the PI 2 Assessment Team will issue a final report and recommend additional modifications to the CMP if issues are identified at the other units that affect Millstone 3. Separate from this CMP driven effort, the Nuclear Safety and Oversight (NS&O) group is conducting an evaluation to determine why the key findings in ACR 7007 were not identified by the independent oversight organizations.

CMP OBJECTIVE 2: The licensing and design basis requirements are clearly documented and are being met

To achieve this goal, Phase I activities include plant system walkdowns and readiness reviews including "vertical" and "horizontal slice" reviews of selected systems. Two separate teams are performing the slice reviews. The vertical slice review team is conducting an in-depth evaluation to determine the extent that design and configuration management has been maintained. This will be conducted for portions of selected essential systems in accordance with PI 15, "Selected Millstone Unit 3 System Reviews." The systems selected for the "vertical slice" review share the following attributes:

- account for a significant fraction of risk as determined by risk-quantification techniques;

- are identified as containing deficiencies by the NRC in their April 4, 1996, letter; and

- are recommended by plant management and others as containing potential problems.

Portions of the following systems are being evaluated through the vertical slice process:

- Service Water
- Quench Spray and Containment Recirculation
- Reactor Trip System
- Auxiliary Feedwater Including ESFAS and AMSAC Initiation
- Emergency AC Power System
- Class 1E 125V DC Power
- Station Blackout Diesel Generator
- 120 V Vital AC
- Control Building Filtration and Ventilation
- Residual Heat Removal (SI mode)
- Pressurizer Safety and Relief Valves

The vertical slice review is an examination of the key design, licensing, and operations and maintenance parameters for selected portions of each of these systems. The objectives of the vertical slice review are to evaluate (1) the accuracy and completeness of design and licensing basis documents for the selected systems, (2) the conformance of plant design, testing, maintenance, operation and configuration with licensing and design basis requirements, and (3) the effectiveness of plant programs, procedures and processes in maintaining plant conformance with licensing and design bases. The applicability and extent of the findings and issues described in ACR 7007 to Millstone 3 will also be reviewed.

The horizontal slice reviews (see PI 4, "Millstone Unit 3 Walkdowns"and PI 5: "Millstone 3 System Readiness Reviews)," are examinations of the materiel condition of the 39 Group 1 systems (see CMP Attachment 3). Group 1 systems are those that have been identified as being Maintenance Rule systems which are both safety-related and risk significant. The teams are evaluating a number of system-related documents including work orders, ACRs, design changes, operability determinations, surveillances, test requirements and open action items for completeness and impact on system readiness. They are also performing walkdowns of each of these systems in accordance with PI 4. The scope of the walkdowns will encompass housekeeping, materiel condition and visual confirmation that selected design changes have been properly installed.

When significant discrepancies are identified or when other problems symptomatic of process or programmatic weaknesses are found by the horizontal or vertical slice reviews, special actions will be taken to define the extent of condition and correct the process weaknesses and identified discrepancies. All discrepancies identified by the reviews will be evaluated for significance, operability and reportability.

CMP OBJECTIVE 3: Adequate programs and processes exist to maintain control of licensing and design basis requirements on a going forward basis

We have established a Configuration Management Team (CMT) to evaluate configuration management at Millstone 3. The team is identifying programs, processes and procedures that provide configuration management and evaluating their adequacy. The CMT evaluations include the operating, training, modification, and maintenance processes that can impact licensing and design bases. They will make corrections and improvements where needed to ensure that the plant's physical and functional characteristics will be maintained in conformance with the licensing and design bases. The evaluation will be conducted in accordance with PI 10, "Configuration Management."

Programs, processes, and procedures which have an impact on configuration management that are required for the safe operation of the plant will be evaluated during Phase I of the CMP. Deficiencies will be assessed in accordance with the Corrective Action Program by using the Adverse Condition Report (ACR) process to determine their significance, operability, reportability and generic implications. Significant deficiencies, i.e., those that involve a safety or operability concern or identify a new process weakness, will be resolved during Phase I. Other deficiencies will be evaluated to determine if additional interim configuration management controls are necessary to maintain effective design and configuration management issues in the short-term. In addition, configuration management-related deficiencies that are discovered by the vertical slice review will be evaluated against the configuration management program improvements to determine if they provide effective barriers to prevent their recurrence.

CMP Completion Criteria:

The Phase 1 CMP actions shall be considered successfully completed when:

1. The vertical and horizontal slice reviews are completed, with expansion as required and, in the final slices, there are no findings of such significance that further review or a mode reduction is required.

2. A review of the individual findings for generic implications per the Corrective Action Program (ACR process) does not identify a significant finding in areas not covered by restart readiness efforts.

3. There is reasonable assurance that recurrence of the findings that have been identified will be prevented in the future by the revised configuration management programs, processes and procedures.

V. Oversight

During the performance of the CMP Phase 1 activities, the Nuclear Safety & Oversight (NS&O) organization will provide a critical and objective assessment as to whether or not Millstone 3 has fully completed its restart plan. Accordingly, a detailed plan entitled "Nuclear Safety & Oversight Assessment Plan for MP3 Restart" has been written and is provided as Attachment 3 to this letter. It provides for timely assessment of areas being evaluated for startup which need increased management attention.

NS&O will also participate in the Executive and Management Quality Committees, routine reviews of CMP activities, special independent reviews of selected portions of the horizontal and vertical slices and an independent startup assessment team. The independent review will be performed for NS&O by personnel from organizations external to NU. Before restart, an independent team will also perform an assessment to determine why the previous Quality Assurance Organization failed to identify the design control problems that were occurring within the organization.

When senior management determines that Millstone 3 is nearing startup readiness, a Startup Assessment Team, consisting of experienced individuals who are not directly involved in, or responsible for, Millstone 3 operations or support will perform an in-depth assessment of the unit's readiness for restart. Their scope will include management and organization, operations and training, maintenance and work control, engineering and technical support, and corrective action effectiveness and self-assessment. Their review will be scheduled close to the anticipated startup date and following the completion of sufficient activities to allow an accurate perspective on restart.

Upon completion of the CMP Phase 1, NS&O will provide a formal report to NU Executive Committee documenting its conclusion regarding Millstone 3's readiness to restart.

We trust that this information adequately addresses your request and we look forward to discussing our plans during the public meeting. If you have any questions on these matters covered in this submittal, please contact Mr. Terry L. Harpster, Director of Licensing at (860) 437-5880.

Very truly yours

NORTHEAST NUCLEAR ENERGY COMPANY

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

Attachment 1: Deficiency Review Team Report/Status Report of Design & Configuration Deficiencies
Attachment 2: Configuration Management Plan (CMP)and Millstone 3 Project Instructions
Attachment 3: Nuclear Safety and Oversight Assessment Plan for MP3 Restart

cc: See Page 12

cc: T. T. Martin, Regional I Administrator
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3
A. C. Cerne, Senior. Resident Inspector, Millstone Unit No.3
W. D. Lanning, Director, Millstone Oversight Team

Mr. J. M. Taylor, Executive Director
Operations
Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

W. T. Russell, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Stop 12 G18
Washington, DC 20555

Subscribed and sworn to before me

this 20th day of June, 1996

Date Commission Expires: 4/30/1998

ATTACHMENT

ONE