Northeast
Nuclear Energy

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The Northeast Utilities System

FOIA/PA REQUEST
Case No: 96-491
Date Rec'd: 11-20-96
Action Off: Pugh
Related Case:

November 18, 1996

Mr. Russell Powell
Nuclear Regulatory Commission
Mail Stop TCB
Washington, DC 20555

Dear Mr. Powell:

Could you please send me a copy of the following Inspector General Reports. I understand these are available through the Freedom of Information Act.

96-02S May 31, 1996
96-05S July 23, 1996
96-06S September 3, 1996
96-01S March 5, 1996
92-14H March 7, 1994
95-771 December 21, 1995

If you have any questions I can be reached at (860) 440-0463.

Sincerely,

Neil Bergh
Executive Assistant to the President

083422-5 REV. 1-94

OFFICE OF INSPECTOR GENERAL

U.S. NUCLEAR REGULATORY COMMISSION

NRC STAFF ACTIONS TO ADDRESS
NORTHEAST UTILITIES SYSTEM (NU)
1991 SELF-ASSESSMENTS

CASE NO. 96-02S May 31, 1996

~~AL 9820023L~~ 26pp

EVENT INQUIRY

OFFICE OF INSPECTOR GENERAL

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NRC STAFF ACTIONS TO ADDRESS
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OFFICE OF THE INSPECTOR GENERAL
EVENT INQUIRY

NRC STAFF ACTIONS TO ADDRESS NORTHEAST UTILITIES SYSTEM (NU) 1991 SELF-ASSESSMENTS

CASE NO. 96-02S

Rossana Raspa 5/31/96
SPECIAL AGENT DATE

George A Mulley 5/31/96
SECTION CHIEF DATE

R. A. Watkins 5/31/96
ACTING ASSISTANT INSPECTOR GENERAL FOR INVESTIGATIONS DATE

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CHRONOLOGY

Date	Event
5/28/91	NRC SALP report 89-99 issued
5/29/91	NU announced formation of 3 task groups to analyze various aspects of its nuclear program (Allegation Root Cause Task Group; Operability, Reportability, and Communications Task Group; and NE&O Performance Task Group)
6/91	Millstone discussed at NRC Senior Management Meeting
8/14/91	NU announced formation of a fourth task group to assess the level of procedural compliance at Millstone (Procedure Compliance Task Force)
8/26/91	NU Allegations Root Cause Task Group Final Report issued with 10 C.F.R. 2.790 request that report be withheld from public disclosure
8/26/91	NU Operability, Reportability, and Communications Task Group Final Report issued
9/26/91	NU NE&O Performance Task Group Final Report issued with 10 C.F.R. 2.790 request that report be withheld from public disclosure
10/4/91	NU Procedure Compliance Task Force Final Report Summary issued with 10 C.F.R. 2.790 request that report be withheld from public disclosure; report reflected procedure non-compliance was 30-50 percent
10/25/91	NU Millstone Nuclear Power Station, Unit 2, Employee Concerns report issued with 10 C.F.R. 2.790 request that report be withheld from public disclosure
12/23/91	NU Procedure Compliance Review Group II Final Report issued; report reflected 99 percent procedure compliance
1/92	Millstone discussed at NRC Senior Management Meeting
3/92	NU developed Performance Enhancement Program (PEP)
5/92	NRC established Millstone Assessment Panel (MAP)
6/92	Millstone discussed at NRC Senior Management Meeting

8/4/92	NRC SALP report 90-99 issued
1/93	Millstone discussed at NRC Senior Management Meeting
6/93	Millstone not discussed at NRC Senior Management Meeting
10/19/93	NRC SALP report 92-99 issued
1/94	Millstone discussed at NRC Senior Management Meeting
6/94	Millstone discussed at NRC Senior Management Meeting
8/26/94	NRC SALP report 93-99 issued
1/95	Millstone discussed at NRC Senior Management Meeting
6/95	Millstone discussed at NRC Senior Management Meeting
1/96	Millstone discussed at NRC Senior Management Meeting
1/96	Millstone placed on the NRC problem plant list

EXECUTIVE SUMMARY

The Office of the Inspector General (OIG), U.S. Nuclear Regulatory Commission (NRC), initiated this inquiry based on information received from Ernest Hadley, an attorney for We the People, Inc., who alleged wrongdoing on the part of the NRC staff regarding certain self-assessments conducted by Northeast Utilities System (NU). Specifically, in letters dated March 4 and 28, 1996, Hadley advised the OIG that in 1991, NU submitted to the NRC certain self-assessment reports regarding licensed activities at the Millstone Nuclear Power Station (Millstone) Units 1, 2, and 3 which identified management and operational deficiencies and which were highly critical of NU's performance at Millstone. Hadley questioned the staff's review of the deficiencies identified in these reports, and he noted that several of these reports were withheld from the public. Hadley alleged that the NRC had colluded with NU to conceal extensive and significant safety problems from public disclosure.

The OIG examined the NRC staff's actions to address the performance deficiencies identified by the licensee. OIG also reviewed inspections and other evaluations conducted by the staff to determine how the staff documented licensed activities at the Millstone site. In addition, the OIG addressed whether the staff handled the public disclosure of the NU self-assessment documents in accordance with NRC regulatory requirements.

The OIG event inquiry disclosed that in spite of the increased regulatory scrutiny in the form of inspections and evaluations, the NRC staff has determined that the deficiencies identified at Millstone in the 1991 NU self-assessments have persisted. The staff has continued to document a general declining level of performance at the Millstone site since 1991. The NRC Executive Director for Operations, the Director of Nuclear Reactor Regulation, and the Region I Regional Administrator advised OIG that given the indicators of poor performance at Millstone, the NRC should have taken more aggressive action including placing the Millstone site on the NRC watch list as early as 1993.

The OIG inquiry also disclosed that the NRC staff handled the public disclosure of NU's self-assessment documents in accordance with the requirements contained in title 10, Code of Federal Regulations, Section 2.790 (10 C.F.R. 2.790). This regulation allows the licensee to submit a withholding request and supporting affidavit with each document it sought to have withheld from the public. OIG determined that when self-assessments are provided to the NRC, licensees often request that they be withheld from public disclosure and that the NRC generally grants the request.

BASIS

The Office of the Inspector General (OIG) initiated this inquiry based on information received from Ernest Hadley, an attorney for We the People, Inc., who alleged wrongdoing on the part of the U.S. Nuclear Regulatory Commission (NRC) staff regarding certain self-assessments conducted by Northeast Utilities System (NU) regarding licensed activities at the Millstone Nuclear Power Station (Millstone) Units 1, 2, and 3. Specifically, in letters dated March 4 and 28, 1996, Hadley advised the OIG that in 1991, NU submitted to NRC certain internal self-assessment reports which identified management and operational deficiencies and were highly critical of NU's performance at Millstone. Hadley questioned the NRC staff's review of the deficiencies identified in these reports, and he noted that several of these reports were withheld from the public. Hadley alleged that the NRC had colluded with NU to conceal extensive and significant safety problems from public disclosure.

SCOPE

The OIG reviewed regulatory actions taken by Region I and the Office of Nuclear Reactor Regulation (NRR) staff to address performance deficiencies identified in the 1991 NU self-assessment reports. OIG also examined NRC Inspection Reports (IRs), Systematic Assessment of License Performance (SALP) reports, and other evaluations prepared by the staff to determine how the staff documented licensed activities at the Millstone site. OIG also reviewed the manner in which the NU self-assessment reports were withheld from public disclosure to ascertain if this action was in accordance with title 10, Code of Federal Regulations, Section 2.790 (10 C.F.R. 2.790).

The OIG inquiry focused on the actions taken by the NRC staff to address the deficiencies identified by the licensee. The OIG did not address the adequacy of NU's efforts to resolve deficiencies identified in their self-assessment reports.

The OIG reviewed the following documents:

-- NU self-assessment reports conducted in 1991 as well as several others conducted by NU in similar program areas;

-- NU Performance Enhancement Program (PEP) documents; Millstone Assessment Panel (MAP) meeting minutes;

-- selected NRC Inspection Reports covering the period 1988 to 1995; Systematic Assessment of Licensee Performance (SALP) reports;

-- Senior Management Meetings briefing papers; Institute of Nuclear Power Operations (INPO) Evaluation Reports pertaining to deficiencies areas; documents provided by NU; and,

-- other NRC documents relevant to NU self-assessments.

During this event inquiry, OIG interviewed NRC Senior Resident Inspectors; Region I managers and staff; the Regional Administrator; NRR past and present Project Managers; the NRR Director and managers; the Deputy Executive Director for Nuclear Reactor Regulation, Regional Operations and Research; and the NRC Executive Director for Operations. In addition, the OIG interviewed certain members of the NU task groups who conducted the self-assessments and an NU management official.

BACKGROUND

Northeast Utilities System (NU) is the parent company of several subsidiaries, including Northeast Nuclear Energy Company and Northeast Utilities Services Company. The nuclear facilities associated with NU include the Millstone Nuclear Power Station, Units 1, 2, and 3 located in New London County, Connecticut.

The NRC has several mechanisms in place to evaluate plant performance and licensee efforts to improve poor performance. These include Inspection Reports, the Systematic Assessment of Licensee Performance (SALP) program, and Senior Management Meetings (SMMs). In addition, licensees may develop their own assessment programs to gauge plant performance, or they may request outside organizations such as the Institute of Nuclear Power Operations (INPO) to evaluate their plant operations.

The SALP program is an integrated NRC effort to evaluate licensee performance and management effectiveness on a periodic basis through the collection of available observations and data such as Inspection Reports (IRs) and Licensee Event Reports (LERs). The program supplements the normal regulatory processes used to ensure compliance with NRC rules and regulations. The SALP program is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources. For example, the program may focus inspection activities to be conducted during the next SALP period. Also, the program is intended to provide meaningful feedback to licensee management regarding the NRC's assessment of its facilities' performance in four functional areas. Currently, the functional areas are: Plant Operations, Maintenance, Engineering, and Plant Support.

An NRC SALP Board, composed of regional and headquarters staff members, meets approximately every 18 months to review the observations and data on licensee performance in the four functional areas. After the SALP report is issued, the NRC schedules a public meeting to present the assessment. At the meeting, the licensee must be prepared to discuss the findings and present any initiatives they plan to take to address the concerns noted in the SALP report.

During mid-1991, in response to an overall decline in performance as documented in a SALP report which highlighted declining trends in functional areas, NU conducted a series of internal self-assessments to analyze various aspects of its nuclear program and provide recommendations for improvement. Between August and December 1991, NU completed the following self-assessments reports: "Allegations Root Cause Task Group Final Report"; "Operability, Reportability, and Communications Task Group Final Report"; "Nuclear Engineering and Operations (NE&O) Performance Task Group Final Report"; "Procedure Compliance Task Force Final Report"; "Millstone Nuclear Power Station, Unit No. 2, Employee Concerns"; and "Procedure Compliance Review Group II Final Report."

In early 1992, based on the results of its self-assessments, NU developed a Performance Enhancement Program (PEP) to focus on the actions it planned to take to improve its performance. The PEP was organized as a three-phase effort: Phase I would determine the underlying causes of NU's performance deficiencies; Phase II would detail action plans to address the deficiencies and lead to improved performance; and Phase III would detail the verification and validation of the successful implementation of the action plans. The PEP was a five-year plan, although many of the key elements were scheduled to be completed within three years.

In May 1992, the NRC Region I Regional Administrator, established a Millstone Assessment Panel (MAP) to review the adequacy of the PEP and to maintain an ongoing review of NU corrective actions and Millstone performance. The MAP developed a list of 23 performance issues which encompassed the significant concerns the NRC had regarding Millstone's performance. In addition, the MAP conducted a public meeting near Millstone to receive comments on NU's PEP.

The NRC had instituted a Senior Management Meeting (SMM) process at the recommendation of a Special Review Group (SRG) in 1986, after a 1985 loss-of-water event at the Davis-Besse Nuclear Power Plant revealed weaknesses in the NRC's integration of licensing, inspection and operating experience. The Executive Director for Operations (EDO), the regional administrators, and the headquarters program office directors meet semi-annually to discuss plants with marginal performance and significant operating problems.

The SMM process begins with a screening meeting between senior managers and staff from the Office of Nuclear Reactor Regulation, the Office for Analysis and Evaluation of Operational Data, the Office of Enforcement, the Regional Administrator, and selected personnel from the regions. These meetings are held approximately 10 to 12 weeks before each SMM to discuss the overall performance of each plant in the respective regions. Plants with operating problems or having experienced significant events are designated discussion plants for the SMM. A narrative summary is prepared by the staff for each discussion plant which identifies the basis for adding a plant to the discussion plant list and any significant change in the plant's status since the previous SMM.

The SMM is conducted under the direction of the EDO. The performance of all discussion plants identified in each region is reviewed. This includes reviewing SALP ratings, significant plant activities, management and station personnel performance, and risk perspectives from a probabilistic risk assessment (PRA) standpoint. In addition, the performance indicator data and enforcement history are evaluated to determine the appropriate status for each plant.

During the SMM, senior managers determine which plants, if any, to place on the NRC problem plant list/watch list. Plants are placed in the following categories: Category 1 includes plants which are removed from the problem plant list due to their corrective action and require no further monitoring. Category 2 includes plants which are authorized to operate

but require c se monitoring by NRC. Plants remain in this category until the licensee demonstrates period of improved performance. Category 3 includes plants which are in shutdown condition due to significant weaknesses. These plants remain in this status until the licensee can demonstrate that adequate programs have been implemented to ensure substantial improvement. NRC Commission approval is required for restart of these plants. Plants that are placed in Category 2 or Category 3 are referred to as being on the NRC problem plant list or NRC watch list. Not all plants discussed at the SMM are placed on the problem plant list. The EDO may decide to take other action such as issuing a trending letter or directing that a diagnostic evaluation be conducted at a particular plant. A trending letter advises the utility's chief executive officer or board that the plant performance is close or trending toward problem plant status. In addition, licensee senior managers of each plant discussed during the SMM, but not placed on the problem plant list, are contacted by the regional administrator and informed of NRC's concerns.

The Institute of Nuclear Power Operations (INPO) was founded by the nuclear industry and is a private organization whose stated mission is to promote the highest levels of safety and reliability in the operation of nuclear plants. INPO is funded entirely by utilities, and its board is made up of industry executives. INPO sends a team of inspectors every 18 to 24 months to each plant to review operations. INPO inspectors stay about two weeks and issue a detailed report to the licensee. INPO findings and recommendations are intended to assist licensees in their ongoing efforts to improve all aspects of their nuclear programs.

DETAILS

I. NRC STAFF ACTIONS TO ADDRESS PERFORMANCE DEFICIENCIES IDENTIFIED BY NU SELF-ASSESSMENT REPORTS.

Review of NRC Inspection Reports:

OIG reviewed a selection of inspections conducted by the NRC Region I at the Millstone Units 1, 2, and 3 from 1989 to 1995. In reviewing these inspections, OIG grouped them according to the SALP periods within which they were conducted. Generally, Region I performed numerous routine inspections and special team inspections which were conducted jointly with the NRR staff. Throughout this period, inspectors documented continuing problems in the management and operational areas identified by NU in the self-assessment reports. For example, between June 1989 and December 1990, a special allegation team inspection at Millstone resulted in violations for failure to follow procedures; a special mid-SALP cycle inspection found inadequate surveillance procedures at Unit 1 and noted that improvements were needed in reportability and operability evaluations. In addition, several other NRC inspections noted untimely notification and reporting of problems with equipment/systems (Region I Inspection Reports (IRs) 336/89-13; 245/90-80; 336/89-24; and 423/89-23).

During the period December 1990 to February 1992, several special team inspections noted weaknesses in operability determinations, deficiencies in engineering design (erosion/corrosion) programs, and inadequate response to correct program weaknesses (IRs 245/91- 80, 423/91-80, and 336/91-81). Also, several inspections listed violations for failure to take timely corrective actions and lack of procedures; and failure to follow design procedures (IRs 245/91-16, 245/91-81, and 245/91-04).

During the period February 1992 to April 1993, NRC inspections noted that NU needed improvement in its identification of root causes; development and timely implementation of effective corrective actions; and attention to detail in procedural compliance (IRs 423/92-23; 245/93-10; and 336/91-31).

During the period April 1993 to July 1994, several NRC inspections noted weaknesses and/or issued violations for inadequacy of procedures and procedural adherence; design control; and failure to have operability determinations completely incorporated in procedures (IRs 245/93-32; 245/94-201; and 245/94-36).

In addition, in September 1993, NRC issued a special inspection report which reviewed circumstances surrounding NU's inability to stop a reactor coolant leak from the letdown system isolation valve 2-CH-442. The valve could not be isolated from the reactor coolant system and failure of this valve could have caused a small break loss of coolant accident.

The NRC inspection noted that from June to August 1993, NU repeatedly had been injecting sealant into the valve area and that all four valve studs were damaged. The repair activities were conducted by a NU contractor. On August 5, 1993, excessive leakage from the 2-Ch-442 valve resulted in a forced shutdown of Millstone Unit 2 (IR 336/93-18).

In December 1993, NRC took escalated enforcement action against NU. The NRC Notice of Violation noted that the two-month-long event activities reflected a "breakdown in the quality assurance program and management controls of a safety significant repair activity" which represented "a significant lack of attention and carelessness toward licensed activities." The civil penalty was escalated by 375 percent due to NU management's failure to recognize the safety consequences of the repair activity (IR 336/93-18 and Enforcement Action 93-228).

Review of Systematic Assessment of Licensee Performance (SALP) Reports

OIG reviewed SALP reports for Millstone Units 1, 2, and 3 which covered the period June 1989 to July 1994. One SALP report was issued approximately every 14 to 18 months for all three units. The NRC did not issue a SALP report for the 1994-1995 time period after Millstone was placed on the NRC problem plant list in January 1996. OIG determined that at the beginning of the SALP review period, the Millstone units were evaluated in seven functional areas. The seven areas were: Plant Operations; Radiological Controls; Maintenance/Surveillance; Emergency Preparedness; Security and Safeguards; Engineering and Technical Support; and Safety Assessment/Quality Verification. However, in 1993, the NRC changed the SALP functional areas to Plant Operations; Maintenance; Engineering; and Plant Support. Generally, OIG found that the SALP reports for Millstone showed a decline in performance. SALP ratings dropped from primarily Categories 1 and 2 to ratings in Categories 2 and 3. Also, SALP reports noted problems with procedural adherence, corrective action effectiveness and the adequacy of root cause analyses at all three Millstone units.

Indications of a declining trend in performance was noted by the NRC in SALP Report 89-99 for the period June 16, 1989, to December 15, 1990. While all three units were rated in Categories 1 and 2, the need for improvements in performance-based audits and self-assessments and in addressing safety deficiencies and system operability issues in a timely manner was noted. Further, the SALP noted that NU had failed to adequately address the root causes of some employee concerns and that lapses in attention to detail and adherence to procedures had occurred.

SALP Report 90-99 for the period December 16, 1990, to February 15, 1992, reflected that all three Millstone units showed a decline in performance and all units were rated in Categories 2 and 3. The SALP noted that all units were subjected to long forced outages for programmatic and/or equipment problems. In addition, the SALP noted that procedural adherence continued as a problem at all three units.

Subsequently, SALP Report 92-99 for the period February 16, 1992, to April 3, 1993, noted that performance had improved only marginally at all three Millstone units and that long-

standing problems remained at all three units, particularly in the areas of procedural adherence, reportability, and corrective action effectiveness. All units were rated in Category 2, except for ratings in Category 1 for Radiological Controls and Ratings in Category 3 for Safety Assessment/Quality Verification. The SALP reflected that while the PEP addressed the areas of concern, significant performance improvement was not seen due to the low degree of completion of PEP action plans.

SALP Report 93-99 for the period April 4, 1993, to July 9, 1994, reflected that all three Millstone units were rated Category 2 or Category 3 in each of the four functional rating areas. The SALP noted examples of poor implementation of procedures and procedural adherence; plant management ineffectiveness in correcting known weaknesses at Units 1 and 2; and inadequate management attention to resolve certain engineering issues in a timely manner.

Review of Senior Management Meetings (SMMs)

A review of briefing documents from SMMs disclosed that senior managers first discussed the Millstone site at the SMM in June 1991. Further, with the exception of the June 1993 SMM, Millstone was a discussion plant for nine SMMs from June 1991 through January 1996. SMM documents disclosed that the basis for designating all three Millstone units as a "discussion plant" included programmatic weaknesses in NU's timely resolution of design deficiencies; resolution of employee safety concerns; procedural adherence; staff attention to detail; and elimination of significant personnel error. During this period, the SMMs also noted a significant increase in the number of escalated enforcement actions and civil penalties levied against NU.

The SMM documents disclosed that beginning in the early 1990's, the Millstone site experienced declining performance that principally impacted Units 1 and 2. The NRC's focus at the time was in the areas of resolution of employee concerns, corrective actions, and operability determinations. During this period, there was an increase in the number of allegations received by the NRC; therefore, the NRC began to develop concerns with NU's history of harassment and intimidation of employees, the allegation volume, the corrective action processes, regulatory perspective and regulatory compliance.

Although the June 1992 and January 1993 SMMs noted there was an increased number of escalated enforcement actions taken against NU, they also noted some improvement in site performance. In addition, the January 1994 SMM noted that NU's PEP had achieved limited effectiveness, but that a substantial NU management reorganization reflected a "strong effort" to improve performance at Millstone.

Following the January 1995 SMM, the EDO, the NRR Director, and the Region I Administrator met with the NU Board of Trustees on March 17, 1995, to discuss the NRC's concerns with lingering performance problems at the Millstone facility. These problems included the handling of employee concerns, procedural adherence, corrective action process

effectiveness, communication between units, and the historic emphasis on cost savings versus performance.

During the January 1996 SMM, it was noted that NU's performance at Millstone had concerned NRC for the last five years. Further, the NRC senior managers, in view of the history of serious operational problems at the site and NU managements' inability to consistently sustain performance improvements across all three units and to effectively resolve many employee safety concerns, concluded that the Millstone site should be placed on the NRC watch list.

In a letter dated January 29, 1996, from the EDO to the President, Energy Resources Group, NU, the NRC advised that the Millstone site was placed on the NRC problem plant list as a Category 2 plant. The letter noted longstanding performance concerns in the areas of untimely corrective actions and operability and reportability determinations for identified design deficiencies and the failure to implement licensee procedures which precipitated significant plant events and in some cases endangered plant staff.

Interviews of NRC Region I Staff

Two former senior resident inspectors at Millstone Units 1, 2, and 3, advised the OIG that the NRC monitored NU's corrective actions through the MAP process by focusing inspection activities in the problem areas. Also, in December 1995, Region I assigned a senior resident inspector to each of the Millstone units. The two former senior resident inspectors stated that there was an increase in the number of inspections conducted by the NRC and in the level of resources devoted to the Millstone site. For example, they noted that the number of resident inspectors assigned to Millstone was increased in 1992, and additional resources were provided to assist resident inspectors in handling the increased number of allegations being received by the NRC regarding Millstone. One former senior resident inspector noted that the expanded inspection activity resulted in an increased number of violations, escalated enforcement actions, and civil penalties levied against NU.

The senior resident inspectors told OIG that given the NRC regulatory framework, the staff took adequate measures to try to force NU to resolve their performance problems. They noted that during 1992-1993, there was some improvement in NU's performance; however, the improvements were not timely or long term. One senior resident inspector felt that NRC could not have taken additional action because NU was essentially operating safely; therefore, there was no basis for shutting down the site. The other senior resident inspector stated that the NRC probably could have been more forceful in exercising regulatory oversight of NU. He said that in his opinion, NRC had sufficient basis for placing NU on the NRC watch list after the 2-CH-442 valve event in August 1993, but the agency did not take the opportunity to do so. He noted that this event was not only safety significant, but it provided the NRC meaningful insight into NU management's performance. He added that NU management's approach allowed the 2-CH-442 event to occur, and the event was an example of management's disregard for safety.

Several Region I Division of Reactor Project (DRP) managers told the OIG that the region conducted extensive inspections and devoted significant resources to the Millstone site. The region used the MAP to track specific performance issues and to focus inspection activities in these areas to follow up on NU corrective action. Several managers stated that at first it appeared that the MAP process was effective and that NU was addressing NRC's concerns. They also stated that it appeared that improvements were being made until the 2-CH-442 event occurred at Unit 2.

The DRP managers attributed the NU performance deficiencies to licensee management. The DRP managers cited poor management organization and oversight, inconsistency in dealing with the three units, and preoccupation with cost containment. Managers noted that NU developed great corrective action plans but was ineffective at following through on their commitments. One manager said that it always appeared that NU was addressing NRC's concerns by establishing a new program or initiative or instituting a significant management reorganization. For example, he noted that after the 2-CH-442 event, NU initiated a major management reorganization. He added that whenever NU took such action, the NRC then needed a period of time, possibly a year or two, to determine the effectiveness of the new program or initiative. He stated that for several years, NU was one "significant event" away from being placed on the watch list.

The current DRP Branch Chief stated that in April 1994, the regional administrator directed the MAP to refocus its efforts to gain closer oversight of all Millstone units. According to the Branch Chief, during this time NU was disagreeing with the MAP findings regarding their performance problems; consequently, the MAP and NU officials were meeting periodically to discuss NU's continuing deficiencies. He noted that one of the major problems involved the verification and validation aspects of the PEP. The Branch Chief added that by early 1995, NU accepted the NRC's view that they still had significant problem areas and they recognized that the PEP was ineffective. He said that NU then incorporated the remaining PEP issues into their Improving Station Performance (ISP) plan.

The Branch Chief said he attributed NU's performance deficiencies to a lack of leadership and a refusal by management to accept fault. He noted that NU management practices regarding employee concerns and work control problems were due to management's inability to follow through on commitments and to NU corrective actions which tended to be narrowly construed. However, he said that he had recommended against placing Millstone on the NRC problem plant list.

The former Deputy Director of DRP and the former Director of DRP advised the OIG that the NRC took appropriate actions to address NU's performance deficiencies. The former DRP Deputy Director noted that the MAP process enabled the region and NRR staff to closely monitor licensed activities and to allocate and coordinate resources at the Millstone site. The former DRP Director said that the NRC took a number of actions to monitor the implementation of NU corrective actions including initiating the MAP and a PEP Special Review Group; increasing staff resources devoted to Millstone; and initiating an aggressive

inspection program. Both managers stated that NU management was not effective in implementing long term improvements. In addition, the former Deputy Director stated that senior Region I and NRC Headquarters managers were fully aware of the status of licensed activities at Millstone. He noted that senior managers thoroughly discussed Millstone and reviewed SALP reports, plant performance and programmatic issues every six months at pre-briefing meetings and SMMs.

The current Deputy Director of DRP told OIG that Region I has conducted numerous inspections at Millstone and has used essentially every available inspection tool to improve plant performance. He noted that the only inspection not conducted by Region I was a diagnostic evaluation. He said that there were probably additional actions the NRC could have taken such as placing Millstone on the NRC watch list sooner. He stated that he recommended to the Region I Administrator that Millstone be placed on the NRC watch list in 1993. He noted that while NU could have improved performance, their deficiencies did not mean that they were operating the plant outside the NRC regulatory framework. According to the Deputy Director, the NRC did not have an adequate basis for shutting down the plant.

The current Director of DRP stated that NRC inspection activities have been directed by the MAP as well as the SALP reports. According to the DRP Director, the NRC inspections have been monitoring performance deficiencies over the past four or five years. He noted that the NRC inspections consistently identified NU's failure to adequately implement corrective actions. He added that the NRC met with NU management throughout the inspection process to discuss inspection findings and recurring problems. He recalled that during this time period, MAP recognized that a major problem with NU's validation and verification feature of the PEP program was that NU was focusing on numbers rather than the quality of corrective actions. He added that while NU proposed good program initiatives, they had problems implementing their plans.

The DRP Director said that in late 1993, after noticing continued performance problems at Millstone, he suggested to the Region I Administrator that the site be placed on the NRC watch list. He said that the regional staff had conveyed the appropriate information to senior NRC officials so that members of the SALP and SMMs had an accurate representation of the status of licensed activities at the Millstone site.

The Regional Administrator, Region I, advised the OIG that the region initiated the MAP to establish a mechanism for measuring the success of NU's corrective actions. He noted that such panels are typically established for plants that are on the problem plant list or in an extended shut down. He said that initially the MAP was successful in having NU include several items in the PEP such as the verification and validation aspect of the program. In his view, the MAP was successful in focusing inspection activities in the problem areas and directing initiatives above and beyond the core inspection program. The Regional Administrator noted that additional resources were assigned to resolving the large number of allegations being reported to the NRC, and both the region and NRR mounted certain

initiatives to specifically target PEP issues. For example, during late 1993-1994, NRR conducted an engineering team inspection and Region I reviewed the NU Nuclear Safety Concerns Program. Nevertheless, he added that while NU had initiated many new procedures, upgraded processes, and added personnel, the NRC was still observing a large number of allegations, numerous personnel errors, work control problems, and procedural adherence problems.

The Regional Administrator told OIG that there appeared to be an interval of continuous improvement during the SALP period ending in June 1993; the PEP appeared to be responsive to NRC's concerns, and NU appeared to be making improvements. However, he noted that after the August 1993 2-CH-442 event, coupled with steam generator replacement issues at Unit 2, there was a recognition that while there were improvements at Units 1 and 3, Unit 2 performance was continuing to decline. At this juncture, the MAP and senior management focus shifted to Unit 2. He noted that after the unit went into an outage in 1994, NU agreed to an NRC confirmatory action letter to remain shut down.

The Regional Administrator advised the OIG that in hindsight, NU officials have been good at doing critical self-assessments and good at planning corrective action; however, they have not been effective in correcting their longstanding problems. He noted that whenever the NRC identified a problem, NU would attempt to understand the problem and develop a grandiose program to address the issue. He added that NU has made "a lot of promises too many times" and while there may have been a temporary period of improvement, it was not long term. He said he believed that NU was committed to resolving the problems, but may not have had the capacity to do so.

The Regional Administrator told OIG that he had received a page that purported to be a part of an "LRS 1991 report," (LRS Incorporated has been a consultant to NU) which was disturbing because it laid out a game plan that recommended to NU to interact with the NRC at multiple levels in order to defuse certain "perceptions generated" by the NRC. The Regional Administrator provided OIG a copy of the LRS document. This document noted that the NRC had certain "perceptions" including the Millstone site had pervasive procedural non-compliance, recurring design issues at Unit 1, and problems in attention to detail at Unit 2. The document discussed redirecting the work of various NU task groups to assure coverage of NRC's areas of concerns or "perceptions." In addition, the paper suggests that "NU mount a full court press at all levels of the NRC to prevent the Millstone Site from being placed on the troubled plant list." [Note: In response to OIG questions, the Regional Administrator said he did not specifically recall from whom, when or how he had received the LRS document or whether he subsequently discussed it with the NRC staff].

The Regional Administrator acknowledged that several of his management staff may have recommended that Millstone be placed on the watch list; however, he noted that other managers recommended against it. He also noted that in 1995, the MAP recommended against placing Millstone on the NRC watch list. He said in hindsight, Millstone should have been placed on the NRC watch list sooner. He added that until January 1996, NRC senior

managers felt that NU was making improvements which were sufficient to counterbalance the deficiencies that were still present.

Interviews of NRC Headquarters Staff

Several current NRR Project Managers and one former Project Manager assigned to the Millstone site told OIG that they reviewed inspection reports and provided information and observations to NRR managers which were relevant to the SALP process and SMMs. While several of the Project Managers were aware that NU had conducted self-assessments, they were not generally familiar with the contents of these reports.

The former Director, Project Directorate I-4, NRR, who was also the MAP co-chairman between 1992 and 1994, advised that the MAP initially met monthly to assess the PEP's performance in implementing corrective action. Further, the MAP reviewed inspection reports and discussed findings with the resident inspectors in order to assess NU's implementation of corrective actions. According to the Project Director, there were improvements in many areas until 1993, when conditions at Millstone become static. He stated that because there were improvements in NU's performance, he never thought the site should have been placed on the NRC watch list during his tenure.

The current Director, Project Directorate, NRR stated that during 1995, the MAP reviewed NU's procedural program, corrective action program, and safety concerns program. In addition, the MAP focused on the Millstone Unit 2 re-start project after the unit went into an extended outage. He noted that the MAP periodically met with NU to review progress being made. However, he said that NU had not met the goals and expectations agreed on between NU and the NRC. The Project Director stated that NRR and Region I staff met semi-annually to assess NU's performance in the SALP issue areas and to re-direct inspection resources to those areas of greatest plant deficiencies.

The Associate Director for Projects, NRR, advised OIG that discussions during pre-briefing meetings involved plants of greatest concern to the NRC. He recalled that during past SMMs, NRC managers discussed significant performance and technical issues affecting Millstone. According to the Associate Director, senior managers were concerned that the Millstone units were engaged in an unhealthy competition because they operated independent of each other and the units were not sharing information.

The Associate Director stated that over the years there have been numerous discussions at the SMMs regarding whether Millstone should be placed on the NRC watch list. The decision not to place Millstone on the watch list prior to January 1996 was a consensus decision reached by NRC managers. In addition, he said that while Millstone was not placed on the NRC watch list until 1996, the NRC did apply additional inspection resources to the site. Also, he noted that as a result of NRC concerns, senior NRC managers met with the NU Board of Trustees in 1995, to discuss NU's poor performance. However, he stated that in hindsight, Millstone probably could have been placed on the NRC watch list sooner.

The Director of NRR, NRC, advised the OIG that he has attended essentially all SMMs since March 1987. From March 1987 to March 1990, he was the Regional Administrator in Region I. He recalled that the SMM discussions in the 1990-1991 time period, were essentially focused on Millstone Unit 2 concerns with instrumentation and hardware issues as well as a general concern that performance was declining at that unit. He said that the protocol for the SMM is to obtain the opinion and recommendation of the regional administrator as to what action should be taken regarding a particular plant(s) in his region; however, a consensus is typically formed as to the appropriate action for each discussion plant. He stated that the consensus reached at the January 1995 SMM, was that senior managers would escalate the agency's concern by meeting with the NU Board of Trustees before issuing a trending letter or placing Millstone on the NRC problem plant list.

The Director of NRR stated that during the NRC's meeting with the NU Board of Trustees, they expressed concern; however, he did not discern any substantive change in NU performance following the meeting. He noted that subsequently, during the SMM in January 1996, senior managers concluded that NU's performance problems were sufficient to place Millstone on the NRC problem plant list. He said that discussions during that meeting focused primarily on whether only Millstone Units 1 and 2 or all three units should be placed on the problem plant list. The NRR Director said that senior managers concluded that fundamentally, the issues were management oriented; therefore, they decided that all three units deserved to be placed on the problem plant list.

The Director of NRR stated that in hindsight the NRC could have met with the Board of Trustees or placed Millstone on the NRC problem plant list sooner and that the NRC probably should have done so after the August 1993 2-CH-442 event. In addition, he stated that while the NRC had focused on team inspections and other activities, the agency did not escalate the matter quickly enough. Moreover, it appeared the NRC had "done a very good job of inspecting, finding things, and we have not done as good a job of integrating it." Further, it appeared that some of the commitments made by NU were not fully implemented and that the NRC was not aggressive enough in verifying that NU's commitments were in fact implemented.

The Deputy Executive Director for Nuclear Reactor Regulation, Regional Operations and Research (DEDO), NRC, stated that he was familiar with the self-assessments conducted by NU because he was responsible for a special review group which reviewed NU's safety concerns program in December 1991. As part of that effort, he had reviewed the self-assessments, therefore, he was familiar with the performance deficiencies which were identified by NU. He said he did not recall specific discussions regarding the Millstone site during SMMs. However, he did recall that in early 1995, NRC senior managers met with the NU Board of Trustees which was extremely unusual. He noted that the meeting did not have the response that the NRC was looking for because improvement in NU's performance was not forthcoming. The DEDO stated that the 2-CH-442 valve event in August 1993, was significant enough to warrant the NRC taking more aggressive action against NU. He added

that although the civil penalty levied against NU for the event was significant, it should have motivated the NRC to scrutinize the Millstone site more closely.

The Executive Director for Operations (EDO), NRC, advised the OIG that the SMM discussions concerning Millstone during the 1991 to 1992 time period were focused on the deficiencies identified by NU in their self-assessments. He added that the MAP reports indicated that NU's performance was improving at the time. However, he stated that he considered the August 1993 2-CH-442 event a flagrant act which indicated that NU management was out of control. He noted that following the event, Millstone was a discussion plant at the January 1994 SMM. The EDO stated that subsequently, in early 1995, he and other senior managers met with the NU Board of Trustees to discuss the agency's concerns regarding NU's poor performance at Millstone. He added that such action was rarely done; however, in retrospect, NRC should have placed Millstone on the NRC watch list after the 2-CH-442 event.

The EDO told OIG that at SMMs, the regional administrator generally sets the tone for the desired action to be taken regarding each of the discussion plant(s) in their respective region. In this instance, the Region I Administrator presented information regarding NU's operational performance which resulted in Millstone's status as a discussion plant and ultimate inclusion on the NRC watch list. However, he noted that the status of a plant is decided through a consensus reached by senior managers at the SMMs. He stated that because NU had sporadic improvements over the years, senior managers did not feel justified in placing the Millstone site on the problem plant list sooner. He said that currently, there is no formal criteria for placing a plant either on the discussion plant list or the problem plant list. In addition, he said that a plant could remain a discussion plant indefinitely.

On May 1, 1996, NRC issued SECY-96-093 which addresses issues related to SMMs and evaluation processes for placing plants on the NRC watch list. More specifically, this document addresses the following issues: the preparation for, and conduct of, SMMs; the assumptions and criteria that are used to evaluate the safety performance of nuclear power plants; providing greater openness to the industry and public about the NRC evaluation process; criteria and actions to be taken when a plant remains on the watch list for an extended period; and criteria in determining when a plant may be removed from the watch list.

II. NRC'S HANDLING OF NU SELF-ASSESSMENTS IN ACCORDANCE WITH 10 C.F.R. 2.790

Background

OIG reviewed NRC rules pertaining to the availability of official records which are located in Title 10 Code of Federal Regulations, Section 2.790 (10 C.F.R. 2.790), public inspections, exemptions, requests for withholding. This regulation generally provides that NRC records

and documents are subject to public disclosure in the absence of a compelling reason for nondisclosure. The regulation also provides that several categories of records may be excluded from public disclosure. Specifically, 10 C.F.R. 2.790(a)(4) exempts records from public disclosure which contain trade secrets and commercial or financial information obtained from a person, which is privileged or confidential, and 10 C.F.R. 2.790(a)(6) exempts personnel and medical files and similar files, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

The regulation requires the person proposing that a document be withheld from public disclosure submit to the NRC an application for withholding accompanied with an affidavit identifying the basis for nondisclosure when the document is submitted. The NRC then determines if the information sought to be withheld from public disclosure is a trade secret or confidential or privileged information, and if so, should be withheld from the public. If the NRC denies the request for withholding, a denial notice is sent to the individual who submitted the document advising that the document will be placed in the Public Document Room (PDR) in not less than thirty days. Section 2.790(c) explicitly states that if the applicant requests withdrawal of the document within the specified period, the document will not be placed in the PDR and will be returned to the applicant. However, information submitted in a rule making proceeding which subsequently forms a basis for the final rule will not be withheld from public disclosure by the NRC and will not be returned to the applicant after denial of the application for withholding.

The NRC staff advised that periodically, licensees voluntarily provide the NRC copies of their internal review of operations or programs. When these self-assessments are provided to the NRC, licensees often request that they be withheld from public disclosure under Section 2.790. In addition, OGC staff advised that the NRC generally grants the licensee's request that the documents be withheld from the public under Section 2.790(a)(4), since they contain confidential information that would not routinely be released to the public and such disclosure would impair the NRC's ability to obtain frank information in the future.

NRC Staff Handling of NU's Withholding Requests

On August 26, 1991, NU forwarded to the NRC Document Control Desk a copy of its "Operability, Reportability, and Communications Task Group Final Report" for NRC's information and review. This document included a listing of recommendations for improvement in the subject areas. Upon receipt of the report, the NRC placed it in the NRC Public Document Room (PDR).

Also, on August 26, 1991, NU forwarded to the Regional Administrator, Region I, NRC, a second task group report entitled, "Allegations Root Cause Task Group Final Report." Accompanying this report was an affidavit and request by NU that the report be withheld from public disclosure in accordance with 10 C.F.R. 2.790. According to the affidavit, NU requested that the document be withheld from the public for several reasons. Specifically, NU asserted that information in the report was proprietary, the information was contained in

personnel files and involved personnel matters, the information could be utilized in making personnel decisions, and the information made reference to the conduct/performance of specific individuals.

On September 26, 1991, and October 4, 1991, NU forwarded to the Regional Administrator, Region I, NRC, a copy of the "NE&O Performance Task Group Final Report" and a copy of the "Procedure Compliance Task Force Final Report," respectively. In addition, on October 25, 1991, NU submitted to the Region I Administrator, NRC, a report entitled "Millstone Nuclear Power Station, Unit No. 2, Employee Concerns." NU requested that each of these reports be withheld from public disclosure in accordance with 10 C.F.R. 2.790 and provided supporting affidavits with their requests.

On November 13, 1991, the Director, Division of Reactor Projects, Region I, NRC, responded to NU's requests that the Allegations Root Cause Task Group Final Report, NE&O Performance Task Group Final Report, and Procedure Compliance Task Force Final Report be withheld from public disclosure. NRC advised NU that some of the material contained in the reports could be withheld from disclosure under 10 C.F.R. 2.790(a)(6), but that the remaining material should be placed in the NRC Public Document Room. The NRC further advised NU that it could request withdrawal of the reports in accordance with 10 C.F.R. 2.790(c), or provide the NRC with reasons for withholding additional portions.

In a letter dated November 22, 1991, NU informed the NRC of its decision to withdraw the reports from the docket in their entirety rather than allow redacted versions to be released to the public. On December 5, 1991, NU made a similar request to withdraw from the docket the fourth self-assessment it submitted to the NRC on October 25, 1991, as this report was not referenced in the NRC's November 13, 1991, letter. NU also requested that certain handouts it provided the NRC during meetings with the staff be withdrawn. After considerable debate among the staff, NRC ultimately agreed to treat all four of NU's reports and related handouts as Section 2.790 material and withhold them from public disclosure.

A Region I manager told OIG that NU's repeated requests for document withholding under Section 2.790 required the NRC to balance several important, competing interests. He noted that the task force reports dealt with highly visible issues at a highly visible site. During the late 1991 time period, the NRC Chairman was stressing the importance of conducting business in the public. He advised that it was forced to weigh the needs of the licensee to communicate with the NRC in a candid manner and the licensee's ability to perform critical self-assessment against the public's need to know. According to the Region I manager, in deciding whether to treat the NU documents as Section 2.790 material, the staff also considered the importance of protecting the identity of allegers and the personal privacy of individuals involved in the reports.

The OGC staff advised that licensee documents are generally not reviewed for Section 2.790 applicability unless a licensee requests withholding. According to OGC and Region I staff, these requests are reviewed by NRC counsel to ensure that the request complies with Section

2.790 requirements. Regarding the NU self-assessment reports and meeting handouts relating to Millstone, the staff stated that attorneys from the NRC OGC and RegionI Counsel, had reviewed these documents and provided advice to the staff.

NU'S Two Procedure Compliance Review Reports

As noted above, NU forwarded its "Procedure Compliance Task Force Final Report" to the NRC on October 4, 1991. On December 23, 1991, NU submitted to the NRC a second "Procedure Compliance Review Group II Final Report." However, NU did not include with the second report a request that the document be withheld from public disclosure pursuant to 10 C.F.R. 2.790. The second report noted that 99 percent procedural compliance was observed by the task group. This differed sharply with the findings made in the task force report issued two months earlier, wherein procedural compliance was observed 30 to 50 percent of the time.

According to Region I staff interviewed by the OIG, both compliance review reports accurately reflect the areas and issues addressed in each report. In addition, the staff stated that they were not surprised by the findings in either report. Region I staff explained that the task forces were initiated in response to NRC's recommendation that NU determine the root cause of Millstone's procedural noncompliance problem. The second procedural compliance review was initiated, in part, to put the findings of the first procedural compliance review in proper perspective. Several Region I managers stated that they did not rely on what NU identified as the level of or source of their noncompliance problems; rather, they focused on NU's efforts to resolve the matter.

The OIG determined that since NU requested withholding of only one of the two procedural compliance task force reports, it appeared that NU was selectively controlling the information released to the public. Because NU requested Section 2.790 withholding of the task force report which found 50 to 70 percent procedural compliance, and did not seek withholding of the task force report which found 99 percent compliance, NU provided the public only with the information that was most favorable to it. Accordingly, this selective handling of information gave the appearance that NU's procedural compliance with NRC and internal requirements was near perfect (99 percent).

While several NRC staff members noted the benefits in allowing licensees to submit documents to the NRC under the protection afforded by Section 2.790, the Director, Office of Enforcement, NRC, commented on areas where the rule needed to be changed. He noted that Section 2.790(c), as currently written, permits a licensee to seek the return of documents it had submitted to the NRC when the NRC denies its request to withhold the documents from public disclosure. He stated that the NRC should not have to return documents if the NRC relies on them, regardless of whether the document meets the requirements of Section 2.790(a). According to the Director, once the document is submitted to the NRC, the agency should decide how the document should be categorized. If the licensee is unable to persuade

the NRC to withhold the document from public disclosure, it would be required to challenge the staff's decision in Federal court.

Interviews of NU Personnel

The OIG interviewed members of the NU task groups who were involved in conducting the self-assessments in 1991, and a NU management official. The task group members essentially confirmed the historical basis for NU's initiating the internal self-assessments and confirmed their findings.

The NU management official told the OIG that the success of the PEP and the subsequent five year business plan has been "mixed." He noted that there have been a number of discreet areas where these programs were effective and timely, and had generally accomplished what NU set out to accomplish. However, in other cases these programs were ineffective. Accordingly, he said that the real issue was that some of the performance deficiencies identified by NU in 1991 were still present, therefore, the PEP has not been effective. He stated that NU procedure compliance performance continues to need attention and improvement, and that more recently, NU's attention has focused on design control and integrity of design basis issues.

Regarding the issue that NU sought that the first procedural compliance task group report be withheld from public disclosure but did not make a similar request for the second report, the NU official surmised that a judgment was made by NU that the nature of the second report did not rise to the level where NU had concerns about critical self-assessments having an adverse impact on NU. He stated that he did not believe that the document fell into this category, therefore, it would be difficult to advance an argument that the document could be withheld under 10 C.F.R. 2.790.

The task group leader responsible for conducting the second procedure compliance review stated that NU management did not conduct the second review to invalidate the first procedure compliance report. Rather, he said that after NU issued the first report, NU management took certain immediate actions including advising employees that NU would take disciplinary action, to include termination for non-compliance of procedures. He stated that NU management later directed the second procedure compliance review to gauge the effectiveness of their corrective actions.

According to the second procedure compliance task leader, the second group sampled every department at Millstone and conducted a larger number of observations than the first review group. He also stated that the major difference between the two reports was that the second review group found that NU employees were now completing a procedure change work order, rather than not complying with procedures.

FINDINGS

1. During this inquiry, OIG learned from the staff that in spite of increased NRC inspections and evaluations the deficiencies identified at Millstone in the 1991 NU self-assessments have persisted. The staff has continued to document a general declining level of performance at the Millstone site since 1991. Furthermore, the Region I Administrator had information that indicated in 1991, NU management intended to conduct "a full court press" to change NRC "perceptions" of poor performance at Millstone and to convince senior NRC management to not place Millstone on the NRC watch list. The NRC EDO, Director of NRR, and the Region I Administrator acknowledged to OIG that based on the indicators of poor performance at Millstone, NRC should have taken more aggressive action including placing the Millstone site on the NRC watch list as early as 1993. This was especially true in light of the 1993 2-CH-442 event. However, NU's periodic changes in program initiatives and management reorganizations caused the NRC staff to allow an excessive amount of time for NU's proposed corrective actions to take effect. Moreover, NU's sporadic improvements in some areas of NRC concern neutralized the staff's willingness to take prompt aggressive action.

2. NRC handled NU's 1991 self-assessment documents in accordance with the requirements of 10 C.F.R. 2.790. OIG determined that intentionally or otherwise, NRC licensees can, to a limited degree, control information released to its ratepayers, stockholders, and the public by strategically requesting protection of information provided to the NRC under 10 C.F.R. 2.790. Because the NRC is not required to, and in practical terms, cannot effectively determine what information constitutes a trade secret or what information is already in the public domain, Section 2.790 requires the licensee to submit a withholding request and affidavit with each document it seeks to have withheld from the public. This regulatory framework allows a licensee to selectively control the information available to the public by requesting Section 2.790 withholding for documents which reflect poorly on the licensee and by not requesting withholding for self-assessments which portray the licensee in a favorable manner.

OFFICE OF INSPECTOR GENERAL

U.S. NUCLEAR REGULATORY COMMISSION

NRC HANDLING OF ISSUES
RELATED TO REFUELING OPERATIONS
AT MILLSTONE UNIT 1

CASE NO. 96-05S July 23, 1996

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EVENT INQUIRY

OFFICE OF INSPECTOR GENERAL

U.S. NUCLEAR REGULATORY COMMISSION

NRC HANDLING OF ISSUES
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CASE NO. 96-05S July 23, 1996

EVENT INQUIRY

NRC HANDLING OF ISSUES RELATED TO REFUELING OPERATIONS AT MILLSTONE UNIT 1

CASE NO. 96-05S July 23, 1996

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

July 23, 1996

OFFICE OF THE
INSPECTOR GENERAL

MEMORANDUM TO: Chairman Jackson
Commissioner Rogers
Commissioner Dicus

FROM: Hubert T. Bell
Inspector General

SUBJECT: OIG EVENT INQUIRY - NRC HANDLING OF ISSUES RELATED TO REFUELING OPERATIONS AT MILLSTONE UNIT 1 (CASE NO. 96-05S)

The Office of the Inspector General (OIG), U.S. Nuclear Regulatory Commission (NRC), has completed the subject Event Inquiry which was based on allegations provided to this office by Northeast Utilities Senior Engineer George Galatis and his attorney, Ernest Hadley.

This OIG Event Inquiry identified deficiencies with the NRC's handling of technical concerns related to refueling practices and the operation of the spent fuel pool at the Millstone Nuclear Power Station, Unit 1 that Galatis brought to the staff's attention on April 26, 1994, and which NU reported to the NRC in a Licensee Event Report, dated October 18, 1993.

This report is furnished for whatever action you deem appropriate. Please notify this office within 90 days of what action, if any, you take based on the results of this Event Inquiry.

cc: James M. Taylor, EDO

OFFICE OF THE INSPECTOR GENERAL
EVENT INQUIRY

NRC HANDLING OF ISSUES RELATED TO
REFUELING OPERATIONS AT MILLSTONE UNIT 1

CASE NO. 96-05S

Special Agent — Date 7/23/96

Rossana Raspa — Section Chief — Date 7/23/96

R.G. Walters — Assistant Inspector General for Investigations — Date 7/23/96

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CHRONOLOGY OF SIGNIFICANT EVENTS

Date	Event
10/18/93	NU submits LER 93-11 and advises the NRC that conditions may have existed where the Millstone Unit 1 spent fuel pool cooling system may have been incapable of maintaining pool temperature below the 150° Fahrenheit (F) design limit.
1/24/94	Millstone Unit 1 shutdown to begin refueling outage 14.
4/22/94	NRC issues inspection report 50-245/94-01 addressing LER 93-11 and refueling outage 14.
4/26/94	George GALATIS, a senior NU engineer, contacts NRC with numerous allegations, including spent fuel pool cooling at Millstone Unit 1.
5/6/94	OI initiates an evaluation based on GALATIS' allegations.
6/30/94	NU submits revision 8 to the Millstone Unit 1 Final Safety Analysis Report (FSAR).
8/15/94	NRC issues inspection report 50-245/94-201 addressing LER 93-11.
8/28/94	OI interview of GALATIS.
10/31/94	OI upgrades its investigation of GALATIS' allegations from an evaluation to a full scale investigation.
5/19/95	Second OI interview of GALATIS, with Region I project engineer present.
7/28/95	NU submits license amendment request to the NRC to Allow for full core offloads as a normal end of cycle event at Millstone Unit 1.
8/21/95	Petition filed by Attorney Ernest HADLEY on behalf of GALATIS and We the People, Inc. pursuant to 10 CFR Part 2.206. Petition maintained that NU "knowingly, willingly, and flagrantly operated Millstone Unit 1 in violation of its operating license for approximately 20 years..."
8/28/95	Supplement to the 10 CFR Part 2.206 petition filed by HADLEY.
8/28/95	OIG initiates investigation (95-77I) based on information in GALATIS' 10 CFR Part 2.206 petition.

8/29/95	OI's investigation of GALATIS' allegations is upgraded to high priority status.
9/1/95	NRC issues inspection report 50-245/95-28 addressing refueling practices at Millstone Unit 1.
9/12/95	NU submits additional information to support license amendment request.
9/13/95	OIG interview of GALATIS.
9/22/95	NRC's Office of Nuclear Reactor Regulation (NRR) completes its Safety Evaluation of NU's license amendment.
10/2/95	NRC's Division of System Safety and Analysis, NRR, completes its review of safety and licensing issues associated with Millstone Unit 1 full core offloads.
10/11/95	NU letter is issued advising the NRC that installation of cross-tie connection from the shutdown cooling system to the spent fuel pool cooling system was completed and that NU planned to conduct a full core offload for refueling outage 15.
10/11/95	Second OIG interview of GALATIS.
10/13/95	NRC issues first Request for Additional Information (RAI) to NU.
10/18/95	NU responds to first RAI.
10/20/95	NRC issues second RAI to NU.
10/23/95	NU responds to second RAI.
10/23/95	NU letter is issued stating that a full core offload for upcoming refueling outage would take place upon issuance of an amendment or NRC notification to proceed under the provisions of 10 CFR Part 50.59.
10/26/95	NRC verbally advises NU that the license amendment would not be issued by 10/27/95.
10/26/95	NU changes its scheduled refueling outage date to 11/3/95.
10/30/95	NRC issues third RAI to NU.
10/31/95	NU responds to third RAI.

11/2/95	NU advises NRC of plans to commence outage on 11/3/95 and await the amendment.
11/3/95	NU commences shutdown for refueling outage 15.
11/6/95	NRC's Division of Systems Safety and Analysis completes its review of the license amendment.
11/8/95	NRC public meeting is held at Waterford, Connecticut Town Hall.
11/8/95	NRC Region I forwards results of inspections of cross-tie modification to the NRR Director.
11/9/95	NRC issues license amendment no. 89 to NU.
3/12/96	Third OIG interview of GALATIS.

EXECUTIVE SUMMARY

This Office of the Inspector General (OIG), U.S. Nuclear Regulatory Commission (NRC) event inquiry was initiated based on concerns by Northeast Utilities (NU) Senior Engineer George GALATIS and his attorney, Ernest HADLEY, about the NRC's handling of issues associated with refueling practices and the operation of the spent fuel pool at the Millstone Nuclear Power Station, Unit 1. The issues pertaining to NU's refueling practices were first identified by GALATIS who notified NU management in 1992 that the practice of offloading the full core during refueling outages was outside the Millstone Unit 1 design basis and a violation of the Millstone Unit 1 operating license. The design basis issue was previously addressed by OIG in event inquiry 95-77I, dated December 21, 1995.

During this event inquiry, OIG reviewed how and when the NRC addressed the safety concerns raised by GALATIS. To accomplish this, OIG examined documents relevant to GALATIS' allegations such as NRC inspection reports. OIG also interviewed NRC staff and licensee employees who worked to address these health and safety issues.

OIG determined that there were delays by the NRC in addressing technical concerns raised by GALATIS. Further, OIG determined that Region I technical staff did not interview GALATIS about his April 26, 1994, allegations regarding NU's operation of the spent fuel pool at Millstone Unit 1. The only interview of GALATIS involving a member of the NRC technical staff took place on May 19, 1995, when a Region I project engineer provided technical assistance during an NRC Office of Investigations (OI) interview.

OIG learned that the concerns raised by GALATIS to NU management resulted in issuance of a Licensee Event Report (LER 93-11), dated October 18, 1993. In this LER, NU indicated that it typically performed full core offloads during refueling outages at Millstone Unit 1. NU also described a full core offload scenario that was beyond the design basis of the plant. At the time of LER 93-11, Millstone Unit 1 had conducted 13 refueling outages.

OIG determined that subsequent NRC inspection reports 50-245/94-01 (94-01) and 50-245/94-201 (94-201), issued in April and August 1994, respectively, did not thoroughly address the issues reported by NU in LER 93-11. However, these inspection reports were intended by the NRC to resolve the issues in LER 93-11. Documents reviewed and testimony obtained by OIG during this event inquiry indicated that Region I would have closed these issues had GALATIS not pursued his allegations related to NU's refueling practices at Millstone Unit 1 by filing a 10 CFR Part 2.206 petition with the NRC in August 1995.

In this event inquiry, OIG also reviewed the NRC's handling of NU's July 28, 1995, request to amend the Millstone Unit 1 operating license to allow full core offloads as a normal event during refueling outages. OIG found no improprieties by NRC staff with respect to the approval of NU's license amendment request.

BASIS

This Office of the Inspector General (OIG), U.S. Nuclear Regulatory Commission (NRC) event inquiry was initiated based on concerns by Northeast Utilities (NU) Senior Engineer George GALATIS and his attorney, Ernest HADLEY, about the NRC's handling of issues associated with refueling practices and the operation of the spent fuel pool at the Millstone Nuclear Power Station, Unit 1. The issues pertaining to NU's refueling practices were first identified by GALATIS who notified NU management in 1992 that the practice of offloading the full core during refueling outages was outside the Millstone Unit 1 design basis and a violation of the Millstone Unit 1 operating license.

On October 11 and 12, 1995, OIG interviewed GALATIS in connection with his allegation that NRC staff allowed NU to perform full core offloads knowing that this practice was outside the Millstone Unit 1 design basis and a violation of its operating license. This issue was the subject of OIG event inquiry 95-77I, dated December 21, 1995.

During the OIG interview, GALATIS and HADLEY provided information which formed the basis for this event inquiry and resulted in a subsequent interview on March 12, 1996. When interviewed, GALATIS and HADLEY expressed strong concern about the way the NRC and NU were addressing problems with refueling practices at Millstone Unit 1.

SCOPE

In order to address the concerns raised by GALATIS and HADLEY, OIG reviewed the following: (1) the NRC's handling of allegations which GALATIS made to the NRC on April 26, 1994; (2) the NRC's handling of a Licensee Event Report (LER 93-11) that NU submitted to the NRC on October 18, 1993; and (3) the NRC's handling of a license amendment request that NU submitted to the NRC on July 28, 1995.

In addition to OIG interviews of GALATIS and NRC staff, including the Millstone Unit 1 project manager, Senior Resident Inspector and NRC managers, OIG reviewed the following documents related to the GALATIS/HADLEY concerns:

- Licensee Event Report 93-11;
- Revision 8 to the Millstone Unit 1 FSAR;
- NRC inspection reports relevant to the refueling practices/spent fuel pool issues;
- Previous OIG and OI interviews of GALATIS;
- Previous OIG interviews of NRC staff;
- NRC files pertaining to GALATIS' allegations;
- NU's July 28, 1995, license amendment request and supporting documents;
- NRC reviews and reports relating to NU's license amendment request.

BACKGROUND

In 1992, NU Senior Engineer George GALATIS raised the issue of improper refueling practices at Millstone Unit 1. GALATIS notified his management that NU's practice of offloading the full core during normal refueling outages at Millstone Unit 1 was outside design basis assumptions in the Millstone Unit 1 Final Safety Analysis Report (FSAR) and a violation of the plant's operating license.

As a result of GALATIS' concerns, NU commissioned an independent engineering analysis of the Millstone Unit 1 spent fuel pool to determine its ability to adequately remove heat generated under various scenarios. Under normal refueling operations, the design limit of the spent fuel pool was 150°F. However, NU's analysis identified a situation where the temperature in the spent fuel pool could reach 216°F following a single failure loss of a shutdown cooling system pump. This situation involved a full core offload beginning 150 hours after shutdown.

[NOTE: A single failure is defined as an occurrence which results in the loss of capability of a component to perform its intended safety function. With respect to spent fuel pool cooling, Section 9.1.3. of the NRC's Standard Review Plan (SRP), dated July 1981, included provisions that there be no loss of function as a result of a single active failure or failures to nonsafety-related components or systems during normal refueling conditions.]

As a result of the independent engineering analysis, NU submitted Licensee Event Report 93-11 (LER 93-11) to the NRC on October 18, 1993. NU reported that in the event of a failure of a shutdown cooling system pump, the spent fuel pool cooling system may have been incapable of maintaining the temperature of the pool below the 150°F design limit. NU reported that this refueling scenario involved a full core offload beginning 150 hours after reactor shutdown. NU reported this event as a condition that was outside the design basis of the plant.

In LER 93-11, NU also reported that the Millstone Unit 1 FSAR described a "normal" refueling sequence as the removal of one-third of the core to the spent fuel pool. However, NU added that its practice during normal refueling outages had been to remove the full core. According to the FSAR, a full core offload was only used during an "emergency" refueling sequence.

On July 28, 1995, NU submitted a license amendment request to the NRC seeking approval to conduct full core offloads as a normal event during refueling outages at Millstone Unit 1. NU requested that the NRC's review of the amendment request be accelerated to support the refueling outage scheduled for October 13, 1995.

The requested license amendment sought NRC approval to change NU's technical specifications for refueling and spent fuel pool handling. To support this, NU planned to install a cross-tie between the two pumps of the shutdown cooling system. The modification would enable NU to take credit for the capability of both shutdown cooling system pumps to provide additional cooling to the spent fuel pool cooling system. In the event of a single active failure of a shutdown cooling pump under the new, normal full core offload scenario, NU would still have the use of one shutdown cooling system pump and the spent fuel pool cooling system pumps. This would provide the necessary cooling to the spent fuel pool and maintain pool temperature within limits.

NU's license amendment request stated that the cross-tie modification would be installed under the provisions of 10 CFR 50.59, while NRC approval would be requested to permit a "full core offload as a normal core offload scenario." On October 11, 1995, NU reported to the NRC that the cross-tie modification had been completed.

On August 21, 1995, Attorney Ernest HADLEY filed a petition with the NRC on behalf of GALATIS and We the People, Inc. pursuant to 10 CFR Part 2.206. The petition requested that NU's operating license for Millstone Unit 1 be suspended for 60 days and that NU's request for a license amendment be denied. In the petition, GALATIS and We the People, Inc. contended that NU "knowingly, willingly and flagrantly operated Millstone Unit 1 in violation of its operating license for approximately 20 years." The petitioners contended that NU operated Millstone Unit 1 in violation of license amendments 39 and 40 by offloading all 580 fuel assemblies into the spent fuel pool during refueling outages.

Beginning in October 1995, the NRC issued the first of several Requests for Additional Information (RAIs) to NU to assist in the staff's review of the proposed license amendment. Based on information provided by NU in response to these RAIs and, as a result of several internal reviews by the staff, the NRC issued license amendment 89 for Millstone Unit 1 on November 9, 1995.

The license amendment added a license condition to NU's operating license, as opposed to the requested change of technical specifications. The amendment allowed NU to conduct full core offloads as a normal event during refueling outages at Millstone Unit 1.

DETAILS

I. NRC's Handling of George GALATIS' Allegations

On April 26, 1994, GALATIS telephonically contacted the Region I Allegation Coordinator and provided him with several allegations. In addition to allegations related to NU's refueling practices and operation of the spent fuel pool at Millstone Unit 1, GALATIS provided allegations related to containment isolation valves, the turbine building closed cooling water system and reactor vessel head stud detensioning. These allegations were documented in a Region I Allegation Receipt Report and in a June 20, 1994, letter to GALATIS. The corresponding Region I Allegation Disposition Record, dated May 31, 1994, indicated that the Millstone Unit 1 Senior Resident Inspector (SRI) would meet with GALATIS to assess only his questions regarding the scope of a June 1994 NRC inspection on an unrelated technical concern.

OIG reviewed the Region I allegation file (RI-94-A-0090) which contained information pertaining to GALATIS's April 26, 1994, allegations. This review identified information related to NU's refueling practices which GALATIS provided to the Millstone Unit 1 Resident Inspector in June 1995. The file also contained documents memorializing conversations between Region I staff and GALATIS in June 1995. In one of these documents, dated June 20, 1995, the Millstone Unit 1 SRI indicated that GALATIS planned to contact his lawyer "to determine what he could do to escalate these issues in order to move them along at a faster pace." The SRI added that GALATIS used the term "go public with the issues."

On June 2, 1994, the Millstone Unit 1 SRI met with GALATIS. The handwritten notes taken by the Millstone Unit 1 SRI during this meeting indicated that GALATIS discussed his concerns with Millstone Unit 1 operations and management in the following areas: (1) procedural adherence; (2) operational conceit; (3) management integrity; and (4) NRC not enforcing its regulations pursuant to 10 CFR Parts 50.5, 50.7 and 50.9. The SRI's notes did not contain any information indicating that GALATIS was questioned regarding his technical concerns with NU's refueling practices and the operation of the spent fuel pool at Millstone Unit 1. Nevertheless, the SRI indicated in his notes that he "heard no specific new technical concerns." The SRI also indicated in his notes that GALATIS had a large amount of documentation to support his concerns and that GALATIS wanted to arrange a meeting, with a court reporter present, to transfer these documents to the NRC.

A handwritten NRC memorandum from a Region I Branch Chief in the Division of Reactor Projects (DRP) was attached to the SRI's notes which indicated that the interview of GALATIS did not identify any new technical concerns and that a transcribed interview of GALATIS should take place. The Branch Chief wrote that, "I don't see much to go on here, other than his [GALATIS'] opinions."

In the June 20, 1994 letter, Region I described GALATIS' allegations in essentially the following manner: LER 93-11 was misleading; NU management tried to misdirect him from raising concerns related to the spent fuel pool; NU deliberately attempted to deceive the NRC in information they submitted; and since 1976, Millstone Unit 1 routinely performed full core offloads that were outside the plant design basis.

GALATIS was subsequently interviewed by an NRC Office of Investigations (OI) investigator on August 28, 1994. The OI investigator documented his interview of GALATIS in a Report of Interview. During his interview, the OI investigator focused on GALATIS' wrongdoing allegations with respect to NU's refueling practices and NU's operation of the spent fuel pool at Millstone Unit 1.

On May 19, 1995, the OI investigator conducted a transcribed interview of GALATIS. A Region I project engineer participated in this interview to provide technical assistance to OI. The project engineer acknowledged to OIG that, at the request of the OI investigator, he participated in the interview to assess GALATIS' technical issues. OIG found no record indicating that NRC technical staff independently interviewed GALATIS about his concerns with the refueling practices and the operation of the spent fuel pool at Millstone Unit 1.

[NOTE: NRC staff interviewed GALATIS in September 1995 as part of a special NRC inspection into NU's employee concerns program.]

With respect to GALATIS' technical allegations, the Region I project engineer who assisted OI told OIG that there "hadn't been that much focus on wrapping them all up and closing them out." The project engineer stated this approach changed in about April 1995 as GALATIS became more active in pursuing his allegations with the NRC. The Region I project engineer opined that GALATIS "was probably frustrated with the lack of seeing some wrap up answers on issues that he brought us."

The project engineer added that towards the end of May 1995, a Region I Branch Chief was, "eager to start pursuing wrapping up George's [GALATIS] issues because he had been so persistent in pursuing some of these concerns and he [Region I Branch Chief] was worried about it blowing up into something bigger, I think."

The Region I project engineer drafted a memorandum to the OI investigator, dated June 15, 1995, documenting his review of the transcript from the May 19, 1995, interview of GALATIS. As a result of his review, the project engineer identified eight issues, including technical concerns and wrongdoing allegations associated with the Millstone Unit 1 spent fuel pool. The project engineer acknowledged in his memorandum that additional technical inspections by Region I were warranted with respect to GALATIS' technical concerns.

In his memorandum, the Region I project engineer also commented on whether OI should pursue an investigation based on GALATIS' allegations. The project engineer wrote that "OI may be best advised to open a case at this time even with the limited evidence provided since

this matter will not be resolved and go away otherwise." The project engineer added that GALATIS is "seemingly technically credible and he strikes me as someone with great tenacity."

On November 15, 1995, the Region I Allegation Coordinator sent GALATIS a letter which referred to the 10 CFR Part 2.206 petition that GALATIS submitted on August 21, 1995. This letter informed GALATIS that, "The NRC staff is in the process of evaluating the petition. As a result, the NRC's evaluation [of] your original concerns regarding the Unit 1 spent fuel pool including the enforcement of NRC regulations in this area will be addressed in, or await the issuance of, the Director's Decision in this matter."

II. NRC's Handling of Licensee Event Report 93-11

On October 18, 1993, NU submitted Licensee Event Report 93-11 (LER 93-11) to the NRC. NU reported that the spent fuel pool cooling system may have been incapable of maintaining temperature in the pool below the 150°F design limit. This scenario involved a single active failure to the shutdown cooling system pump during a full core offload beginning 150 hours after reactor shutdown. NU reported this event as a condition that was outside the design basis of the plant.

In the LER, NU reported that the Millstone Unit 1 Final Safety Analysis Report (FSAR) described a "normal" refueling sequence as the removal of one-third of the core to the spent fuel pool. However, NU indicated in the LER that its practice during normal refueling outages was to remove the full core. This practice was an "emergency" refueling sequence according to the FSAR.

As corrective actions, NU committed to revising the Millstone Unit 1 FSAR along with the design basis documents to reflect actual normal refueling practices and the results of analyses associated with these practices. NU also stated that "schedular and/or procedural controls" would be established so that cooling system capabilities and plant design limits would not be exceeded. NU committed to take all these actions prior to refueling outage 14 which was scheduled to begin in January 1994.

On April 22, 1994, Region I, NRC, issued inspection report 50-245/94-01 (94-01) which addressed LER 93-11 and refueling outage 14 that began on January 24, 1994. The inspection report stated that NU planned to utilize administrative controls during refueling outage 14 to ensure that spent fuel pool temperatures remained within design parameters, "given a failure of a spent fuel pool cooling pump." The NRC did not issue any violations with respect to LER 93-11.

OIG reviewed the NU special procedure (94-1-7) that was implemented for refueling outage 14. This procedure allowed for a full core offload while crediting only the spent fuel pool cooling system and adhering to design basis and license amendment commitments. The

procedure called for a two-phase core offload incorporating a hold time after the initial third of the core was removed and before the remaining two-thirds were removed. The hold time was necessary to maintain pool temperature below 150°F in the event of a single active failure to the spent fuel pool cooling system under maximum heat load conditions.

OIG also reviewed NU's revision to the Millstone Unit 1 FSAR, dated June 30, 1994. NU specifically referred to refueling outage 14 and special procedure 94-1-7. However, NU did not revise the FSAR to reflect the actual practice used to perform full core offloads during normal refueling outages.

NU special procedure 94-1-7 was the only corrective action taken by NU prior to refueling outage 14, and Region I concluded in inspection report 94-01 that NU's corrective actions with respect to LER 93-11 were adequate. However, this conclusion did not account for NU's commitment in LER 93-11 to revise the Millstone Unit 1 FSAR to reflect actual normal refueling practices prior to refueling outage 14. In LER 93-11, NU committed to take all corrective actions prior to refueling outage 14.

When interviewed by OIG, the Millstone Unit 1 Resident Inspector involved with inspection 94-01 indicated that he was aware of LER 93-11 prior to performing the inspection. With respect to inspection 94-01, the Resident Inspector stated that, "I was aware at the time period that...in previous outages they were moving fuel, but it was not in conformance with their FSAR..." The Resident Inspector added that the Millstone Unit 1 FSAR provided for full core offloads during emergency situations but not as a normal practice.

The Resident Inspector indicated that during inspection 94-01 he followed-up on what he thought were the significant issues of concern in LER 93-11. The Resident Inspector stated that one concern was that NU had been performing full core offloads when their safety analysis required them to perform one-third core offloads. He explained that he did not attempt to determine what NU had done in the past because, at the time, he did not see that as being important. He said he was more concerned with determining whether there were any health and safety implications and if the issue was safety significant. The Resident Inspector stated that NU was not cited for a violation because the issue was self-identified, of low safety significance, and adequate corrective action was taken to minimize event recurrence.

On August 15, 1994, the NRC issued inspection report 50-245/94-201 (94-201) documenting the results of an engineering inspection at Millstone Unit 1 by the Special Inspection Branch, Office of Nuclear Reactor Regulation (NRR). Section 5.8.1 of this inspection referred to LER 93-11 and the NU special procedure that was implemented for refueling outage 14. The report indicated that, "The team reviewed the LER, the special procedure, and the licensee's internal memoranda on this issue, and concluded that the licensee's actions were acceptable." The report added that, "The licensee currently plans to develop a long term solution as part of a spent fuel storage reracking planned for 1997."

OIG discussed with the Region I Administrator the fact that inspection reports 94-01 and 94-201 appeared to close out the issues in LER 93-11. The Regional Administrator told OIG that this suggested that the staff had not done the kind of job expected of them.

The Region I DRP Director told OIG that, following GALATIS' 10 CFR Part 2.206 petition, he was asked by the Regional Administrator to develop a chronology of what the region did with respect to LER 93-11. The DRP Director explained that following GALATIS' petition there was a lot of NRC concern "relative to what did we do and what does the record show." The DRP Director acknowledged to OIG that the handling of LER 93-11 "may have been something in hindsight that we could have done better."

With respect to refueling outage 14, the Region I DRP Director told OIG that "at least based on the inspections we had done up until this 2.206 that came in, I didn't believe that we had done enough detailed inspection to show for example that what they [NU] actually did ... was safe."

When interviewed by OIG, the DRP Branch Chief indicated that he was aware of LER 93-11 when it was submitted in October 1993. The Branch Chief stated that he routinely reviewed all LERs. With respect to LER 93-11, the Branch Chief stated that, "Unit 1 was operating full power, I mean they weren't off loading the core, so it wasn't something to get real excited about at the time."

The Branch Chief added that, "Because the licensee found some problem, it didn't sound like a big problem to me to begin with, and they were going to do something to fix it, so, and they reported it. So they met all my requirements for not getting real excited about it."

The Branch Chief indicated that inspection report 94-01 would have closed out the issues in LER 93-11. According to this Branch Chief, administrative procedures established by NU for refueling outage 14 adequately resolved the issues identified in LER 93-11. However, the Branch Chief acknowledged that the issues in LER 93-11 were not closed because, "Mr. GALATIS has brought this to a newer level I guess. I still do not think, you know, there may be some irregularities here, there may be some violations, but I do not think this is a most safety significant issue to be dwelling on..."

The Branch Chief added that, "They screwed up, they were doing something that wasn't described well in their FSAR. I don't think it was significant to assign a follow-up item to make sure that the FSAR got updated. You know its something, you've got to trust somebody sometime."

On September 1, 1995, Region I, NRC, issued inspection report 50-245/95-28 (95-28). Although this inspection report was issued almost two years after LER 93-11 was submitted, it, like inspection reports 94-01 and 94-201, also addressed LER 93-11. However, unlike these previous inspection reports, inspection report 95-28 documented a review of NU's past refueling practices at Millstone Unit 1. The report indicated that refueling outages 12 and 13

utilized full core offloads and that refueling outages 1 through 11 most likely involved full core offloads. The report concluded that license amendments 39 and 40 "did not completely and accurately describe the refueling activities as they were conducted." The inspection report added that NU's practice of performing full core offloads as a normal refueling operation, including the sequential process implemented during refueling outage 14, may have been conducted outside the Millstone Unit 1 FSAR. The inspection report added that although no conclusions were reached with respect to the safety significance of the issues identified in LER 93-11, a final agency decision in response to GALATIS' 10 CFR Part 2.206 petition would be forthcoming.

III. NRC's Handling of NU's License Amendment Request

On July 28, 1995, NU submitted a license amendment request seeking NRC approval to perform full core offloads as a normal event during refueling outages at Millstone Unit 1. NU requested that the NRC perform an accelerated review of the amendment to support a scheduled refueling outage date of October 13, 1995.

The license amendment requested a change to the Millstone Unit 1 technical specifications for refueling and spent fuel pool operations. To support this request, NU planned to modify the spent fuel pool cooling system by installing a cross-tie modification to the B train of the shutdown cooling system. The modification would enable NU to take credit for the capability of both shutdown cooling system pumps to provide cooling to the spent fuel pool cooling system. Under the new full core offload scenario, NU would still have the use of one shutdown cooling system pump in the event of a single active failure of one shutdown cooling system pump. This would provide the necessary cooling to the spent fuel pool and maintain pool temperature below the limit in the technical specifications.

NU's license amendment request stated that the cross-tie modification would be installed under the provisions of 10 CFR 50.59, while NRC approval would be requested to permit a "full core offload as a normal core offload scenario."

The Plant Systems Branch, NRR, completed a safety evaluation of the license amendment and issued a Safety Evaluation Report (SER) on September 22, 1995. The results of this safety evaluation were that NU adequately addressed the issues relating to the increased heat load in the spent fuel pool that resulted from performing full core offloads.

An assessment of the issues related to full core offloads at Millstone Unit 1 was also performed by the Deputy Director, Division of System Safety and Analysis, NRR. The resulting October 2, 1995, report concluded that the level of detail in NU's license amendment request was inconsistent with NRC requirements and guidance on the content of technical specifications. The report also questioned NU's 10 CFR Part 50.59 process with respect to the cross-tie modification based on conflicting information from NU as to whether or not it involved an unreviewed safety question.

On October 13, 1995, the NRC issued to NU the first of three Requests for Additional Information (RAIs) relating to the proposed license amendment. The NRC issued the remaining RAIs to NU on October 20, 1995 and October 30, 1995.

A portion of the October 13, 1995, RAI involved NU's 10 CFR Part 50.59 evaluation for the cross-tie modification. Specifically, the NRC requested: technical information and the safety evaluation supporting the modification; a summary of procedural changes supporting NU's refueling operations; supporting 10 CFR Part 50.59 evaluations; and NU's basis for concluding that NRC approval in the form of a license amendment was required to perform full core offloads and not for making the physical modification to the plant.

On November 6, 1995, the Reactor Systems Branch of the Division of Systems Safety and Analysis, NRR, issued a SER on the possibility of an interfacing-system loss-of-coolant accident (ISLOCA) resulting from the cross-tie modification aligning the shutdown cooling system to augment the spent fuel pool cooling system. The safety evaluation concluded there was a reasonable assurance against the possibility of an ISLOCA in these two systems due to Millstone Unit 1 design feature, operator actions and administrative controls.

OIG learned that Region I also performed an inspection of the cross-tie modification and issued its findings to NRR on November 8, 1995. The Region I inspectors "walked-down" the modification on October 26, 27 and November 3, 1995, and confirmed that it had been installed and pressure tested.

On November 9, 1995, the NRC approved NU's license amendment. Instead of changing the Millstone Unit 1 technical specifications as requested by NU, the NRC added a license condition to the Millstone Unit 1 operating license. The amendment allowed NU to perform full core offloads as a normal event during refueling outages in accordance with controls that NU provided to the NRC in its July 28, 1995, license amendment request.

OIG FINDINGS

1. OIG determined that Region I technical staff did not interview GALATIS about his April 26, 1994, allegations regarding NU's operation of the spent fuel pool at Millstone Unit 1. The only interview of GALATIS involving a member of the NRC technical staff took place on May 19, 1995, when a Region I project engineer provided technical assistance during an OI interview concerning GALATIS' allegations of NU's intentional wrongdoing.

2. OIG determined that NRC inspection reports 94-01 and 94-201, issued in April and August 1994, respectively, did not thoroughly address the issues reported by NU in LER 93-11. However, these inspection reports were intended by the NRC to resolve the issues reported in LER 93-11. Documents reviewed and testimony obtained by OIG during this event inquiry indicated that Region I would have closed these issues had GALATIS not pursued his allegations related to NU's refueling practices at Millstone Unit 1 by filing a 10 CFR Part 2.206 petition with the NRC in August 1995.

3. OIG found no improprieties or evidence of intentional wrongdoing by NRC staff with respect to the approval of NU's license amendment request.