



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

February 15, 2000

'00 FEB 17 PM 1:12

Ms. Deborah Katz, President
Citizens Awareness Network
P.O. Box 83
Shelburne Falls, MA 01370

Mr. Paul Gunter, Reactor Watchdog Project
Nuclear Information and Resource Service
1424 16th Street, 4th Floor, NW.
Washington, DC 20036

Dear Ms. Katz and Mr. Gunter:

The purpose of this letter is to inform you that the U.S. Nuclear Regulatory Commission (NRC) has completed its review of the Petition you filed pursuant to Section 2.206 of Title 10 of the Code of Federal Regulations (10 CFR 2.206) on November 25, 1996, as amended by letter dated December 23, 1996. These two submittals, hereinafter referred to as "the Petition," were submitted by you on behalf of the Citizens Awareness Network and the Nuclear Information and Resource Service. In accordance with 10 CFR 2.206, the Office of Nuclear Reactor Regulation was assigned to prepare a response to your requests. This review and the NRC's conclusions in the Final Director's Decision were discussed with Ms. Katz and Ms. Rosemary Bassilakis during a telephone call on February 14 and 15, 2000, respectively. Mr. Gunter was notified via a telephone call on February 14, 2000.

In your petition, you requested that the NRC take the following actions: (1) immediate suspension or revocation of Northeast Utilities' (NU's or the licensee's) licenses to operate its nuclear facilities in Connecticut; (2) investigation of possible NU material misrepresentations to the NRC; (3)[a] revoke the operating licenses for NU's nuclear facilities if an investigation determines that NU deliberately provided insufficient and/or misleading information to the NRC and, [b] if NRC chose not to revoke NU's licenses, continued shutdown of NU facilities until the Department of Justice completes its investigation and the results are reviewed by the NRC; (4) continued listing of the NU facilities on the NRC's Watch List should any facility resume operation; (5) continued shutdown of NU facilities until the NRC evaluates and approves NU's remedial actions; (6) prohibition of any predecommissioning or decommissioning activities at any NU nuclear facility in Connecticut until NU and the NRC take certain identified steps to assure that such activities can be safely conducted; (7) initiation of an investigation into how the NRC allowed the asserted illegal situation at NU's nuclear facilities in Connecticut to exist and continue for more than a decade; and (8) an immediate investigation of the need for enforcement action for alleged violation of 10 CFR Part 50, Appendix B.

The bases for your assertions were NU and NRC inspection findings and NU documents referred to in the Petition and a VHS videotape, Exhibit A, which accompanied your Petition. Specifically, you identified areas that included inadequate surveillance testing, operation outside the design basis, inadequate radiological controls, failed corrective action processes, and degraded material conditions.

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The NRC acknowledged receipt of your Petition in a letter dated January 23, 1997. In the acknowledgment letter, you were informed that your request for immediate action in Requests(1) and (8) above was denied. You were further informed that copies of the Petition and videotape were sent to the Office of the Inspector General in response to Requests (7) and parts of Requests (5), (6), and (8).

The NRC issued a Partial Director's Decision (DD-97-21) dated September 12, 1997, which addressed all of your requests, with one exception. Specifically, with respect to Request 3a of your petition, the NRC deferred a decision on your request that the NU operating licenses for the Millstone units be revoked if an investigation determined that NU deliberately provided insufficient and/or false or misleading information to the NRC. The decision on that request was deferred at the time the Partial Director's Decision was issued because several NRC investigations were underway. The Millstone facilities remained shutdown under NRC order until NRC management had been provided evidence that the licensee had fulfilled the intent of the two orders discussed in the following paragraphs. Request 3b of your petition, regarding the continued shutdown of NU facilities until the Department of Justice completed its investigation and the results were reviewed by the NRC, was denied in the Partial Director's Decision. Notwithstanding our 1997 denial of Request 3b, we conclude that, through the actions that we required the Millstone facilities to complete prior to restart, the intent of your request was met. The previously issued Partial Director's Decision is enclosed for your convenience.

The NRC Office of Investigations (OI) conducted numerous investigations from 1996 to the present regarding NU submitting inaccurate or incomplete information to the NRC. OI found instances in which inaccurate and incomplete information had been submitted to the NRC. Most notably, investigations conducted in conjunction with the U.S. Attorney's Office (Department of Justice), determined that the licensee deliberately provided inaccurate and incomplete information to the NRC regarding the qualifications of candidates for operator licenses. On September 27, 1999, the licensee pleaded guilty in Federal Court to 19 violations of the Atomic Energy Act and 6 violations of the Clean Water Act and agreed to pay \$10 million in fines and other compensations, in part, for false statements made to the NRC concerning the qualifications of candidates for operator licenses. The fines were of historic proportion and sent a very clear and distinct message that the NRC does not tolerate false statements or inaccurate information from licensees.

The NRC has carefully evaluated Request 3a of your petition and determined that revocation of the Millstone licenses is not warranted for several reasons. First, the NRC issued two Orders (August 14 and October 24, 1996) to the licensee that required, in part, that the licensee (1) contract with a third party to verify the adequacy of its efforts to establish adequate design bases and controls and (2) retain an independent third party to oversee implementation of its plan for reviewing and dispositioning safety issues raised by employees. Both Orders were closed by letters dated March 11 and April 28, 1999, respectively, based on the licensee's

satisfactory completion of the terms of the Orders. Second, the licensee has made significant changes in the management and operation of the facility since the 1996 timeframe. Third, the NRC provided significant oversight of the changes that occurred at Millstone and has found them to be acceptable as documented in various NRC inspection reports. That oversight included the creation of a Special Projects Office for the Millstone facility; augmentation of the resident inspector staff at the site; and conduct of several restart inspections, multidisciplinary team inspections, and Independent Corrective Action Verification Program inspections. The results of these inspection efforts, as well as information from the then-ongoing and completed investigations, were considered by the Commission in its decision to authorize restart of Millstone Units 2 and 3. Millstone Unit 3 was restarted in July 1998 and Millstone Unit 2 in May 1999. Fourth, significant enforcement action has been taken against NU (1) to reinforce the importance of operating the plants in accordance with the regulations and the terms of its licenses and (2) to emphasize the importance of ensuring that information submitted to the NRC is complete and accurate. In addition to the two referenced Orders and the \$10 million penalty assessed in conjunction with the criminal proceeding, the NRC also issued a \$2.1 million penalty in December 1997 for programmatic deficiencies, issues related to technical specifications, and recurring problems of inadequate procedures and failure to follow procedures, as well as other penalties and Notices of Violation.

The staff has concluded that the issues you raised had merit. However, based on the above actions taken, the staff does not find the revocation of the Millstone licenses appropriate and as such is not able to grant this final portion of your petition. The NRC is currently continuing to closely monitor the Millstone facilities as agency and regional focus plants. The enclosed Final Director's Decision (DD-00-01) addresses Request 3a of your petition.

A copy of the Final Director's Decision will be filed with the Secretary of the Commission for the Commission's review in accordance with 10 CFR 2.206(c). As provided by this regulation, the Decision will constitute the final action of the Commission (for Petitioners' Request 3a) 25 days after its issuance, unless the Commission, on its own motion, institutes review of the Decision within that time.

I have enclosed a copy of the notice of "Issuance of Final Director's Decision Under 10 CFR 2.206" that has been filed with the Office of the Federal Register for publication.

We appreciate your efforts to bring this issue to our attention and your ongoing interest in and concern for ensuring public health and safety and the continued operational safety of nuclear power reactors. We also appreciate your patience during our extensive investigations of the Millstone facilities and trust that our regulatory actions stemming from the two NRC orders, significant oversight which included the creation of the Special Projects Office for the Millstone facilities, extensive inspections, and the licensee's subsequent corrective actions, address your concerns. Please feel free to contact Jacob Zimmerman, Petition Manager, at 301-415-2426 (e-mail<jjz@nrc.gov>) to discuss these or any future concerns you may have regarding NU or Millstone.

Sincerely,


Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

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

Enclosures: 1. Director's Decision DD-00-01
2. *Federal Register* Notice
3. Partial Director's Decision DD-97-21

cc w/encls: Licensee & Service List

We appreciate your efforts to bring this issue to our attention and your ongoing interest in and concern for ensuring public health and safety and the continued operational safety of nuclear power reactors. We also appreciate your patience during our extensive investigations of the Millstone facilities and trust that our regulatory actions stemming from the two NRC orders, significant oversight which included the creation of the Special Projects Office for the Millstone facilities, extensive inspections, and the licensee's subsequent corrective actions address your concerns. Please feel free to contact Jacob Zimmerman, Petition Manager, at 301-415-2426 (e-mail<jiz@nrc.gov>) to discuss these or any future concerns you may have regarding NU or Millstone.

Sincerely,

/RA/

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

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

- Enclosures: 1. Director's Decision DD-00- 01
2. *Federal Register* Notice
3. Partial Director's Decision DD-97-21

cc w/encls: Licensee & Service List

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Millstone Nuclear Power Station
Units 2 and 3

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION
Samuel J. Collins, Director

In the Matter of	)	Docket Nos. 50-245, 50-336,
	)	and 50-423
NORTHEAST UTILITIES)	
	)	License Nos. DPR-21, DPR-65,
	)	and NPF-49
(Millstone Nuclear Power Station,)	
Units 1, 2, and 3)	)	(10 CFR 2.206)

FINAL DIRECTOR'S DECISION PURSUANT TO 10 CFR 2.206

I. INTRODUCTION

By letter dated November 25, 1996, as amended on December 23, 1996, Ms. Deborah Katz and Mr. Paul Gunter (the Petitioners), on behalf of the Citizens Awareness Network, and the Nuclear Information and Resources Service, respectively, filed a Petition pursuant to Title 10 of the Code of Federal Regulations, Section 2.206. The Petitioners requested that the U.S. Nuclear Regulatory Commission (NRC) take the following actions: (1) immediate suspension or revocation of Northeast Utilities' (NU's or the licensee's) licenses to operate its nuclear facilities in Connecticut; (2) investigation of possible NU material misrepresentations to the NRC; (3)[a] revoke the operating licenses for NU's nuclear facilities if an investigation determines that NU deliberately provided insufficient and/or misleading information to the NRC and, [b] if NRC chose not to revoke NU's licenses, continued shutdown of NU facilities until the Department of Justice completes its investigation and the results are reviewed by the NRC; (4) continued listing of the NU facilities on the NRC's Watch List should any facility resume operation; (5) continued shutdown of NU facilities until the NRC evaluates and approves NU's remedial actions; (6) prohibition of any predecommissioning or decommissioning activities at any NU nuclear facility in Connecticut until NU and the NRC take certain identified steps to assure that

such activities can be safely conducted; (7) initiation of an investigation into how the NRC allowed the asserted illegal situation at NU's nuclear facilities in Connecticut to exist and continue for more than a decade; and (8) an immediate investigation of the need for enforcement action for alleged violation of 10 CFR Part 50, Appendix B. The bases for the Petitioners' assertions were NU and NRC inspection findings and NU documents referred to in the Petition and a VHS videotape, Exhibit A, which accompanied the Petition. Specifically, the Petitioners identified areas that included inadequate surveillance testing, operation outside the design basis, inadequate radiological controls, failed corrective action processes, and degraded material conditions.

The NRC informed the Petitioners in a letter dated January 23, 1997, that their request for immediate suspension or revocation of the operating licenses for the NU nuclear facilities in Connecticut was denied and the issues in the Petition, as amended, were being referred to the Office of Nuclear Reactor Regulation for appropriate action.

The NRC issued a Partial Director's Decision (DD-97-21) dated September 12, 1997, which addressed all of the Petitioners' requests, with one exception. Specifically, with respect to Request 3a of the petitioners' request, the NRC deferred a decision on the request that the NU operating licenses for the Millstone units be revoked if an investigation determined that NU deliberately provided insufficient and/or false or misleading information to the NRC. The decision on that request was deferred at the time the Partial Director's Decision was issued because several NRC investigations were underway. Request 3b of the Petition, regarding the continued shutdown of NU facilities until the Department of Justice completed its investigation and the results are reviewed by the NRC, was denied in the Partial Director's Decision. Notwithstanding the NRC's 1997 denial of Request 3b, the NRC concludes that, through the

actions the NRC required the Millstone facilities to complete prior to restart, the intent of request 3b was met.

II. DISCUSSION

Since the time that NRC decided to defer a decision on request 3a, the NRC has conducted numerous investigations involving Millstone, many of which were open at the time of the Partial Director's Decision. On the basis of these investigations, the NRC found instances in which inaccurate or incomplete information had been provided to the NRC. For example, the licensee provided inaccurate and incomplete information to the NRC in submittals regarding the offloading of fuel to the Millstone Unit 1 spent fuel pool. A Severity Level III Notice of Violation was issued to the licensee on May 25, 1999, based in part on the willful submittal of inaccurate or incomplete information. Another investigation, conducted in conjunction with the U.S. Attorney's Office (Department of Justice), determined that the licensee deliberately provided inaccurate and incomplete information to the NRC regarding the qualifications of candidates for operator licenses. On September 27, 1999, the licensee pleaded guilty in Federal Court to 19 violations of the Atomic Energy Act and 6 violations of the Clean Water Act. At the pleading, the licensee agreed to pay \$10 million in fines and other compensations, in part, for false statements made to the NRC concerning the qualifications of candidates for operator licenses. The fines were of historic proportion and sent a very clear and distinct message that the NRC does not tolerate false statements or inaccurate information from licensees.

The NRC has carefully evaluated the Petitioners' request and has determined that revocation of the Millstone licenses is not warranted for several reasons. First, the NRC issued

two Orders (August 14 and October 24, 1996) to the licensee that required, in part, that the licensee (1) contract with a third party to verify the adequacy of its efforts to establish adequate design bases and controls and (2) retain an independent third party to oversee implementation of its plan for reviewing and dispositioning safety issues raised by employees. Both of these Orders were closed by letters dated March 11 and April 28, 1999, respectively, based on satisfactory completion of the terms of the Orders. Second, the licensee has made significant changes in the management and operation of the facility since the 1996 timeframe. Third, the NRC provided significant oversight of the changes that occurred at Millstone and found them to be acceptable. That oversight included the creation of a Special Projects Office for the Millstone facility; augmentation of the resident inspector staff at the site; and conduct of several restart inspections, multidisciplined team inspections, and Independent Corrective Action Verification Program inspections. The results of these inspection efforts, as well as information from the then-ongoing and completed investigations, were considered by the Commission in its decision to authorize restart of Millstone Units 2 and 3. Millstone Unit 3 was restarted in July 1998 and Millstone Unit 2 in May 1999. Fourth, significant enforcement action has been taken against NU (1) to reinforce the importance of operating the plants in accordance with the regulations and the terms of its licenses and (2) to emphasize the importance of ensuring that information submitted to the NRC is complete and accurate. In addition to the two referenced Orders and the \$10 million penalty assessed in conjunction with the criminal proceeding, the NRC also issued a \$2.1 million penalty in December 1997 for programmatic deficiencies, issues related to technical specifications, and recurring problems of inadequate procedures and failure to follow procedures, as well as other penalties and Notices of Violation.

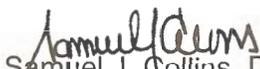
III. CONCLUSION

Therefore, notwithstanding the information developed by the NRC in its investigations, the NRC has determined that the revocation of the Millstone licenses is not warranted, given the changes made at the facility, NRC's oversight of those changes, and the enforcement actions taken to date. Accordingly, the NRC is not able to grant this final aspect of the Petitioners' request. However, the NRC is currently continuing to closely monitor the Millstone facilities and will continue to solicit stakeholders' input, as appropriate.

As provided in 10 CFR 2.206(c), a copy of this Final Director's Decision will be filed with the Secretary of the Commission for the Commission's review. This Final Director's Decision will constitute the final action of the Commission (for Petitioners' Request 3a) 25 days after its issuance, unless the Commission, on its own motion, institutes review of the Decision within that time.

Dated at Rockville, Maryland, this 15th day of February 2000.

FOR THE NUCLEAR REGULATORY COMMISSION


Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

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UNITED STATES NUCLEAR REGULATORY COMMISSION
NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.
MILLSTONE NUCLEAR POWER STATION, UNITS 1, 2, AND 3
DOCKET NOS. 50-245, 50-336, AND 50-423

ISSUANCE OF FINAL DIRECTOR'S DECISION UNDER 10 CFR 2.206

Notice is hereby given that the Director of the Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission (NRC), has issued a Final Director's Decision with regard to a Petition, dated November 25, 1996, as amended on December 23, 1996, filed by Ms. Deborah Katz and Mr. Paul Gunter on behalf of the Citizens Awareness Network and the Nuclear Information and Resource Service, respectively, hereafter referred to as "Petitioners." The Petition pertains to the Millstone Nuclear Power Station, Units 1, 2, and 3.

The Petitioners requested that the NRC take the following actions: (1) immediate suspension or revocation of Northeast Utilities' (NU's or the licensee's) licenses to operate its nuclear facilities in Connecticut; (2) investigation of possible NU material misrepresentations to the NRC; (3) [a] revoke the operating licenses for NU's nuclear facilities if an investigation determines that NU deliberately provided insufficient and/or misleading information to the NRC and, [b] if NRC chose not to revoke NU's licenses, continued shutdown of NU facilities until the Department of Justice completes its investigation and the results are reviewed by the NRC; (4) continued listing of the NU facilities on the NRC's Watch List should any facility resume operation; (5) continued shutdown of the NU facilities until the NRC evaluates and approves NU's remedial actions; (6) prohibition of any precommissioning or decommissioning activities

at any NU nuclear facility in Connecticut until NU and the NRC take certain identified steps to assure that such activities can be safely conducted; (7) initiation of an investigation into how the NRC allowed the asserted illegal situation at NU's nuclear facilities in Connecticut to exist and continue for more than a decade; and (8) an immediate investigation of the need for enforcement action for alleged violation of 10 CFR Part 50, Appendix B.

The bases for the Petitioners' assertions were NU and NRC inspection findings and NU documents referred to in the Petition and a VHS videotape, Exhibit A, which accompanied the Petition. Specifically, the Petitioners identified areas that included inadequate surveillance testing, operation outside the design basis, inadequate radiological controls, failed corrective action processes, and degraded material conditions.

The NRC issued a Partial Director's Decision (DD-97-21) dated September 12, 1997, which addressed all of the Petitioners' requests, with one exception. Specifically, with respect to Request 3a of the petitioners' request, the NRC deferred a decision on the request that the NU operating licenses for the Millstone units be revoked if an investigation determined that NU deliberately provided insufficient and/or false or misleading information to the NRC. The decision on that request was deferred at the time the Partial Director's Decision was issued because several NRC investigations were underway. The investigations of NU have been completed and for the reasons given in the Final Director's Decision, DD-00-01, dated February 15, 2000, the NRC was not able to grant Request 3a of the Petition. Request 3b of the Petition, regarding the continued shutdown of NU facilities until the Department of Justice completed its investigation and the results are reviewed by the NRC, was denied in the Partial Director's Decision. Notwithstanding the NRC's 1997 denial of Request 3b, the NRC concludes

that, through the actions the NRC required the Millstone facilities to complete prior to restart, the intent of request 3b was met.

Additional information is contained in the "Final Director's Decision Pursuant to 10 CFR 2.206" (DD-00-01), the complete text of which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, D.C., and will be accessible from the Agencywide Documents Access and Management System (ADAMS) Public Library component on the NRC Web site, <<http://www.nrc.gov>> (the electronic reading room).

As provided in 10 CFR 2.206(c), a copy of this Final Director's Decision will be filed with the Secretary of the Commission for the Commission's review. This Final Director's Decision will constitute the final action of the Commission (for Petitioners' Request 3a) 25 days after its issuance, unless the Commission, on its own motion, institutes review of the Decision within that time.

Dated at Rockville, Maryland, this 15th day of February 2000.

FOR THE NUCLEAR REGULATORY COMMISSION


Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

DD-97-21
97 SEP 12 P3:22

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
Samuel J. Collins, Director

OFFICE OF SECURITY
RULEMAKING AND
ADJUDICATIONS STAFF

In the Matter of	)	Docket Nos.	50-245
	)		50-336
	)		50-423
NORTHEAST UTILITIES	)		50-213
	)	License Nos.	DPR-21
	)		DPR-65
(Millstone Nuclear Power Station,	)		NPF-49
Units 1, 2, and 3, and	)		DPR-61
Haddam Neck Plant))		
	)	(10 CFR 2.206)	

PARTIAL DIRECTOR'S DECISION PURSUANT TO 10 CFR 2.206

I. INTRODUCTION

On November 25, 1996, as amended on December 23, 1996, Ms. Deborah Katz and Mr. Paul Gunter filed a Petition on behalf of the Citizens Awareness Network (CAN) and the Nuclear Information and Resource Service (NIRS), hereafter, referred to as Petitioners. These two submittals will hereafter be referred to as the Petition. The Petition was filed with the U.S. Nuclear Regulatory Commission (NRC) and the NRC Executive Director for Operations pursuant to Section 2.206 of Title 10 of the Code of Federal Regulations (10 CFR 2.206).

The Petitioners requested that the NRC take the following actions: (1) immediate suspension or revocation of Northeast Utilities' (NU's or Licensee's) licenses to operate its nuclear facilities in Connecticut; (2) investigation of possible NU material misrepresentations to the NRC; (3) continued shutdown of the NU facilities until the Department of Justice

completes its investigation and the results are reviewed by the NRC; (4) continued shutdown until the NRC evaluates and approves NU remedial actions; (5) continued listing of the NU facilities on the NRC's Watch List should any facility resume operation; (6) prohibition of any predecommissioning or decommissioning activity at any NU nuclear facility in Connecticut until NU and the NRC take certain identified steps to assure that such activities can be safely conducted; (7) initiation of an investigation into how the NRC allowed the asserted illegal situation at NU's nuclear facilities in Connecticut to exist and continue for more than a decade; and (8) an immediate investigation of the need for enforcement action for alleged violation of 10 CFR Part 50, Appendix B.¹

The bases for the Petitioners' assertions are NU and NRC inspection findings and NU documents referred to in the Petition and a VHS videotape, Exhibit A, which accompanied the Petition. No new information regarding Licensee activities was provided by the Petitioners except for the alleged violation referred to in Request 8. The Petitioners assert, in Request 8, that NU relied partly on draft calculations in its presentation at a public predecisional enforcement conference with the NRC staff, which included a discussion of an event at the Haddam Neck Plant. The Petitioners further assert that the calculations had not been reviewed and approved in accordance with the requirements of 10 CFR Part 50, Appendix B.

¹ Petitioners requested copies of the Licensee's calculations performed in response to the event at the Haddam Neck Plant that resulted in the introduction of a nitrogen bubble into the reactor vessel. The calculations requested were discussed during a predecisional enforcement conference held on December 4, 1996. The calculations were provided to the Petitioners on July 21, 1997.

The areas of concern identified in the Petition include inadequate surveillance testing, operation outside the design as specified in the updated Final Safety Analysis Report (UFSAR), inadequate radiological controls, failed corrective action processes, and the degraded material condition of the plants. The Petitioners also assert that this information demonstrates that there are inadequate quality assurance programs at NU's nuclear facilities in Connecticut, that NU has made material false statements regarding its Millstone units, and that safe decommissioning of the Haddam Neck Plant is not possible given the defective nature of the design and licensing bases for the facility. The videotape records an August 29, 1996, Citizens Regulatory Commission televised interview of a former Millstone Station employee expressing his views on NU management. The tape has been transcribed and placed on the dockets of the facilities cited. The videotape interview included the former employee's views relating to NU's poor management in allowing degradation of the material condition of the plant; poor radwaste practices resulting in potential radiation exposure to employees; and harassment, intimidation, and subsequent illegal termination of employees raising safety concerns.

On January 23, 1997, the NRC acknowledged receipt of the Petition and informed the Petitioners that the Petition had been assigned to the Office of Nuclear Reactor Regulation to prepare a response and that action would be taken within a reasonable time regarding the specific concerns raised in the Petition. The Petitioners were also informed that the requests for immediate action were denied. The Petitioners were further informed that copies of the Petition and videotape were sent to the NRC's Office of the Inspector General (OIG) in response to Petitioners' Request 7 and parts of Requests 5, 6, and 8.

II. DISCUSSION

The NRC staff has reviewed the Petition and, with the exception of Request 8, has not identified any new information regarding either the Millstone or the Haddam Neck facilities. Both of the facilities have been the subject of close NRC scrutiny for several years.

MILLSTONE FACILITY

With regard to the Millstone units, the NRC staff has been concerned for the last several years about the number and duration of violations at the Millstone site in the broad programmatic areas of design and licensing bases, testing, and radiological controls. Programmatic concerns in these areas, along with concerns in other areas, were major contributors to the decline in performance at the Millstone site. In the most recent systematic assessment of licensee performance (SALP) report of August 26, 1994, the NRC staff stated in the cover letter that it had noted several performance weaknesses, common to all three Millstone units. Among these were continuing problems with procedure quality and implementation, the informality in several maintenance and engineering programs (contributing to instances of poor performance), and the failure to resolve several longstanding problems at the site. In addition to these programmatic problems, the Licensee has had significant problems in dealing with employee concerns involving safety issues at the site.

On November 4, 1995, the Licensee shut down Millstone Unit 1 for a scheduled refueling outage. The NRC sent a letter to the Licensee on December 13, 1995, requiring the Licensee, before restarting Millstone Unit 1, to inform the NRC, pursuant to Section 182a of the Atomic Energy Act of 1954, as amended (the Act), and 10 CFR 50.54(f), of the actions taken to ensure that in the future the Licensee would operate that facility according to the terms

and conditions of the unit's operating license, the Commission's regulations, and the unit's FSAR.

In January 1996, the NRC designated the three Millstone units as Category 2 on the NRC's Watch List. Plants on the Watch List in this category have weaknesses that warrant increased NRC attention until the licensees demonstrate improved performance for an extended period of time.

On February 20, 1996, the Licensee shut down Millstone Unit 2 when it declared both trains of the high-pressure safety injection (HPSI) system inoperable because of a design issue. There was a potential that the HPSI throttle valves could become plugged with debris when taking suction from the sump during recirculation mode.

On March 30, 1996, the Licensee shut down Millstone Unit 3 after finding that containment isolation valves for the auxiliary feedwater turbine-driven pump were inoperable because the valves did not meet NRC requirements. In response to a Licensee root cause analysis of inaccuracies in the Millstone Unit 1 FSAR, identifying the potential for similar configuration control problems at Millstone Units 2 and 3 and the existing design configuration issues identified at these units, the NRC issued 10 CFR 50.54(f) letters to the Licensee on March 7 and April 4, 1996. These letters required that the Licensee inform the NRC of the corrective actions taken regarding design configuration issues at Millstone Units 2 and 3 before the restart of each unit.

In June 1996, the NRC designated the three units at Millstone as Category 3 on the NRC's Watch List. Plants in this category have significant weaknesses that warrant maintaining them in a shutdown condition until the Licensee can demonstrate to the NRC that it has both established and

implemented adequate corrective actions to ensure substantial improvement. This category also requires Commission approval before operations can be resumed.

On August 14, 1996, the NRC issued a Confirmatory Order directing the Licensee to contract with a third party to implement an Independent Corrective Action Verification Program (ICAVP) to confirm the adequacy of its efforts to reestablish the design basis and configuration controls for each of the three Millstone units. The ICAVP is intended to provide additional assurance, before a unit restart, that the Licensee has identified and corrected existing problems in the design and configuration control processes for that unit.

On April 16, 1997, the NRC issued another 10 CFR 50.54(f) letter, which superseded the previously mentioned 10 CFR 50.54(f) letters and consolidated its requests for information and periodic updates. The information requested included: (1) the identification of significant items needed to be accomplished before restart; (2) identification of items to be deferred until after restart; (3) NU's process and rationale for deferring items; and (4) a description of the actions taken by NU to ensure that future operation will be conducted in accordance with the terms and conditions of the operating licenses, the Commission's regulations, and the FSARs. The Licensee provided the initial information requested by letter dated May 29, 1997. Additional information and updates will be provided in accordance with the time intervals specified in the 10 CFR 50.54(f) letter.

During eight NRC inspections conducted between October 1995 and August 1996, more than 60 apparent violations of NRC requirements were identified at the Millstone site. These apparent violations were discussed at a public predecisional enforcement conference held at the Millstone site on December 5,

1996. During the meeting, the Licensee stated that management failed to provide clear direction and oversight, performance standards were low, management expectations were weak, and station priorities were inappropriate. The NRC staff is nearing completion of its evaluation of potential enforcement action to address these apparent violations and their overall impact on the safe operation of the Millstone units.

Additionally, the Licensee has had a chronic problem of not dealing effectively with employee concerns at the Millstone site. On December 12, 1995, the NRC established a review group to conduct an independent evaluation of the history of the Licensee's handling of employee concerns related to licensed activities at the Millstone facility. The review group determined that, in general, an unhealthy work environment, which did not tolerate dissenting views and did not welcome or promote questioning attitudes, has existed at the Millstone facility for the last several years. To address this problem, the NRC issued an Order on October 24, 1996, that directed NU to devise and implement a comprehensive plan for handling safety concerns raised by Millstone employees and to ensure an environment free from retaliation or discrimination. In addition, the Order required NU to have an independent third party oversee its employee concerns program. The third party is responsible for providing periodic reports to NU and the NRC detailing its findings and recommendations. The third-party findings and the NU responses to them will be assessed by the NRC staff for any restart issues.

The NRC regards compliance with regulations, license conditions, and Technical Specifications (TSs) as mandatory. However, the NRC also recognizes

that plants will not operate trouble-free.² This is clearly articulated in Criterion XVI, Appendix B, Part 50, "Quality Assurance Criteria for Nuclear Power plants and Fuel Reprocessing plants." Criterion XVI states that "measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected."

The appropriate response to an identified deficiency can and should vary, depending on the safety significance of the deficiency. For example, for rapidly developing situations, when prompt action is required to assure plants are not in an unsafe condition, automatic safety systems are in place to shut down the reactor. In other, less time-critical situations, TSs relating to structures, systems, and components (SSCs) vital to the safe operation of a nuclear plant require that specific actions be taken within a predetermined time period when the SSC is determined to be inoperable. The time period is dependent on the safety significance of the SSC. NRC Generic Letter 91-18, "Information to Licensees Regarding Two NRC Inspection Manual

² The NRC's approach to protecting public health and safety includes the philosophy of defense-in-depth, which supports the identification and correction of degraded or nonconforming conditions discussed above. Briefly stated, this philosophy (1) requires the application of conservative codes and standards, to establish substantial safety margins in the design of nuclear plants; (2) requires high quality in the design, construction, and operation of nuclear plants to reduce the likelihood of malfunctions, and promotes the use of automatic safety system actuation features; (3) recognizes that equipment can fail and operators can make mistakes and therefore requires redundancy in safety systems and components to reduce the chances that malfunctions or mistakes will lead to accidents that release fission products from the fuel; and (4) recognizes that, in spite of these precautions, serious fuel damage accidents can happen and therefore requires containment structures and safety features to prevent the release of fission products. In the unlikely event of an offsite fission product release, emergency plans are in place to provide reasonable assurance that protective actions can and will be taken to protect the population around nuclear power plants. These emergency plans are coordinated with local and State officials and the Federal Emergency Management Agency.

Sections on Resolution of Degraded and Nonconforming Conditions and on Operability," provides guidance for licensees to determine what actions are required and when they need to be taken for identified degraded or nonconforming conditions.

The conduct of NRC regulatory oversight at the Millstone site is based on the recognition that it is the Licensee's primary responsibility to demonstrate that corrective actions have been effectively implemented. Thus, the Licensee must determine that a unit is in conformance with applicable NRC regulations, its license conditions, and its FSAR and that applicable licensing commitments have been met before the NRC staff can recommend that the Commission approve the restart of any unit. The Licensee's conformance with NRC regulations, license conditions, and licensing commitments is fundamental to NRC's confidence in the safety of licensed activities. In short, the Licensee has the primary responsibility for the safe operation of its facilities.

In a June 20, 1996, letter to the NRC, the Licensee described its Configuration Management Plan (CMP), which is its principal program to provide reasonable assurance that weaknesses at the Millstone units have been effectively corrected. The CMP includes efforts to understand and correct the licensing and design bases issues that led the NRC to issue the 10 CFR 50.54(f) letters and Order actions to prevent recurrence of those issues. The Licensee stated that the objective of the CMP was to document and meet the licensing and design bases requirements of each unit and to ensure that adequate programs and processes are in place to maintain control of these requirements.

The Licensee's CMP must either correct each FSAR deficiency or evaluate it to ensure that the change to the facility does not involve any unreviewed safety question or change to the facility TSs. NU has documented a large number of deficiencies, which vary in scope and safety significance for each unit. These lists contain significant deficiencies that must be corrected before restart and others that the Licensee is planning to correct after the restart. In its continuing reviews of the deficiency lists, the NRC staff will determine whether the Licensee has appropriately scheduled safety-significant items for completion before restart and whether those items that the Licensee will defer until after restart are appropriate for each unit. The results of these efforts will be documented in NRC inspection reports.

The NRC's regulatory oversight of the Licensee's corrective actions requires extensive planning and program integration. To focus more regulatory attention on all of the restart issues related to the Millstone units, the NRC has established a Special Projects Office (SPO) within the Office of Nuclear Reactor Regulation to oversee these activities. The SPO has developed a comprehensive and multifaceted oversight program to verify the adequacy of NU's corrective actions, programs, and processes. The breadth and significance of the problems identified at the Millstone site require this program. The SPO has developed a Restart Assessment Plan (Assessment Plan) for each of the Millstone units, which includes: (1) the appropriate aspects of NRC Inspection Manual, Manual Chapter (MC) 0350, "Staff Guidelines For Restart Approval"; (2) oversight of NU's ICAVP; and (3) oversight of NU's corrective actions relating to employee concerns involving safety issues. The activities associated with the Assessment Plan are in addition to the normal inspection and licensing activities being carried out at the Millstone site.

MC 0350 establishes the guidelines for approving the restart of a nuclear power plant after a shutdown resulting from a significant event, a complex hardware problem, or serious management deficiencies. The primary objective of the guidelines in MC 0350 is to ensure that NRC's restart review efforts are appropriate for the individual circumstances, are reviewed and approved by the appropriate NRC management levels, and provide objective measures of restart readiness.

The Assessment Plan for each unit includes those issues listed in MC 0350 that the NRC staff has identified as relevant to the shutdown of the unit. Each Assessment Plan also includes additional issues determined to be applicable to the specific situation. The Assessment Plans include all actions the NRC expects NU to take before the NRC staff recommends to the Commission that a unit be permitted to restart. Accordingly, the staff will use the Assessment Plan for each Millstone unit to track and monitor all significant actions necessary to support a decision on restart approval of the unit.

The Assessment Plan for each Millstone unit includes the requirement to review the NU Operational Readiness Plan, the deficiency lists associated with the Assessment Plan, including restart and deferred items, the corrective action program, work planning and controls, the procedure upgrade program, the nuclear oversight function (quality assurance), outstanding enforcement items, and a Significant Issues List (SIL), which includes issues identified by both NU and the NRC as issues requiring resolution before restart. NRC MC 93802, "Operational Safety Team Inspection" (OSTI), provides the framework for a team inspection to be performed during the later stages of the restart process.

The inspection will be structured to focus on the pertinent issues at each of the Millstone units.

Within the SPO, a Millstone Restart Assessment Panel (RAP) has been formed in accordance with MC 0350. The RAP meets to assess the Licensee's performance and its progress in completing the designated restart activities. The RAP is composed of the Director, SPO (chairman); the Deputy Directors of Licensing, Inspections, and Independent Corrective Action Verification Program Oversight; the Project Managers for the three Millstone units; the Inspection Branch Chief; the Senior Resident Inspectors for the three Millstone units; and the appointed Division of Reactor Safety representative. The RAP holds periodic meetings with the Licensee to discuss the Licensee's corrective actions and schedules of each Millstone unit. These meetings are noticed and are open to the public. An additional meeting with the public is usually held that same day in the evening to summarize the meeting with the Licensee, provide an update on NRC activities, and address comments from the public.

The purpose of the ICAVP, as stated in the Confirmatory Order, is to confirm that the plant's physical and functional characteristics are in conformance with its licensing and design bases. The ICAVP audit required by the NRC is expected to provide independent verification, beyond NU's quality assurance and management oversight, that the Licensee has identified and satisfactorily resolved existing nonconformances with the design and licensing bases; documented and utilized the licensing and design bases to resolve nonconformances; and established programs, processes, and procedures for effective configuration management in the future. NU has started programs to identify and understand the root causes of the licensing and design bases issues that led to NRC issuance of the 10 CFR 50.54(f) letters to NU and to

implement corrective actions that will ensure that NU maintains the design configuration and that each unit is in conformance with its licensing basis. NU has indicated that the scope of its corrective programs will include those systems that it has categorized as either Group 1 (safety-related *and* risk-significant) or Group 2 (safety-related *or* risk-significant). The ICAVP audit must provide insights into the effectiveness of NU's programs so that the results can be reasonably extrapolated to the structures, systems, and components that were not reviewed in the audit.

As a practical matter, the NRC cannot do a 100-percent verification of the Licensee's corrective actions, processes, and programs for each Millstone unit. However, a comprehensive and multifaceted oversight process has been developed by the NRC staff to provide a high level of confidence that the Licensee has implemented required corrective actions and that all of the issues on the SILs have been resolved. The independent third-party evaluations required by the NRC will be used to enhance NRC confidence that the Licensee's corrective action programs have been effectively implemented at each unit.

NRC activities (including oversight of the ICAVP) to ensure that effective corrective actions are being taken by the Licensee will provide additional assurance that the Licensee's corrective action programs have been effectively implemented. These activities will include in-process reviews of the ICAVP contractor's activities, reviews of the ICAVP results, and additional independent reviews of compliance with the design and licensing bases of selected systems. The State of Connecticut's Nuclear Energy Advisory Council has provided input to the NRC staff for selecting the systems which will be reviewed by the ICAVP contractor and has been invited to observe the NRC staff's ICAVP inspections.

When the restart review process has identified, corrected, and reviewed relevant issues regarding each Millstone unit, a restart authorization process will be initiated for that unit. Upon receipt of a staff recommendation and a briefing on any ongoing investigations, the Commission will meet to assess the recommendation and vote on whether to allow the restart of the unit. The same process will be followed for the remaining units.

HADDAM NECK FACILITY

With regard to the Haddam Neck Plant, the Licensee shut down the plant on July 22, 1996, as required by the facility's TSs, because of concerns that the containment air recirculation fans service water piping may exceed design loads during certain accident scenarios. The Licensee determined that these concerns and other hardware and programmatic problems identified before and during the forced outage should be resolved before restarting the plant. Thus, the Licensee decided to begin Refueling Outage 19 on August 17, 1996. On October 9, 1996, the owners of the Haddam Neck Plant stated that a permanent shutdown of the plant was being considered by the Board of Trustees based on an economic analysis of operations, expenses, and the cost of replacement power. Subsequently, all fuel assemblies were removed from the reactor and placed in the spent fuel pool.

From November 21, 1995, to November 22, 1996, the NRC conducted numerous inspections at the Haddam Neck Plant to review several facets of plant performance. These inspections included a Special Team inspection by NRC headquarters staff focused on engineering performance; a special Augmented Inspection Team (AIT) inspection of a reactor vessel nitrogen intrusion event in late August and early September 1996 that lowered the reactor vessel water

level; a special radiation protection inspection of a significant contamination event in November 1996; an emergency preparedness inspection to observe the Licensee's response during an emergency exercise held in August 1996; and several resident inspections. Numerous violations, as well as several significant regulatory concerns, were identified during these inspections. Most of the violations were discussed at a transcribed public predecisional enforcement conference at the Millstone training building in Waterford, Connecticut, on December 4, 1996. The December 4 conference was open to the public and focused on the broader programmatic deficiencies underlying the violations that contributed to the problems at Haddam Neck. A Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$650,000 was issued on May 12, 1997, and subsequently paid by the Licensee.

The restart process described for the three Millstone units is not applicable to the Haddam Neck Plant. By letter dated December 5, 1996, the Licensee certified to the NRC, pursuant to 10 CFR 50.82(a)(1)(i) and 10 CFR 50.82(a)(1)(ii), that it had decided to permanently cease operations at the Haddam Neck Plant and had permanently removed the fuel from the reactor. The Licensee further noted that a Post-Shutdown Decommissioning Activities Report (PSDAR) and a site-specific decommissioning cost estimate would be submitted in accordance with 10 CFR 50.82, "Termination of License."

It is important to note that the NRC continues to identify problems at both the Millstone site and the Haddam Neck Plant, as documented in inspection reports issued after this Petition was filed. These findings indicate that the corrective actions required to restart the Millstone units have not yet been fully implemented. The NRC staff will not recommend that the Commission allow the restart of a Millstone unit until the Commission has determined, in

accordance with the Assessment Plan, that the necessary corrective actions have been effectively implemented for the unit.

As for Haddam Neck, a Confirmatory Action Letter (CAL) was issued to the Licensee on March 4, 1997, concerning radiological-control problems at the Haddam Neck Plant. This CAL is an example of the type of action that the NRC takes to assure that the limited activities at the site will be conducted in a safe manner and in accordance with regulatory requirements. The CAL prohibits the Licensee from performing any radiological work except that required to maintain the plant in a safe configuration until the corrective actions identified in the CAL have been implemented.

III. NRC RESPONSE TO REQUESTED ACTIONS

In summary, the Licensee's implementation of its Configuration Management Plan (CMP) for each Millstone unit, response to the elements in the NRC staff's Restart Assessment Plan (Assessment Plan) for each Millstone unit, implementation of actions to improve programs to address employee concerns at the Millstone site, and the implementation of the decommissioning process specified in 10 CFR 50.82 for the Haddam Neck Plant, as discussed above, are the bases for the NRC staff's responses discussed in this Partial Director's Decision to the specific actions that the Petitioners requested be taken against NU. The Petitioners' requested actions and the NRC staff's responses are discussed below.³

³ In this Partial Director's Decision, Petitioners' Requests have been identified as Requests 1 through 8. These requests correspond to Requests A.1 through 5, B and C in the initial Petition, and Request II.A in the amendment to the Petition.

1. Petitioners request that the NRC immediately suspend or revoke NU's license to operate Connecticut Yankee (Haddam Neck) and the Millstone Nuclear reactors due to chronic, negligent management of the reactors which, for over a decade, has endangered and continues to endanger occupational and public health and safety and the environment due to resultant and cumulative major safety problems and violation of NRC regulations.

The Petitioners base their request to suspend or revoke the operating licenses of Haddam Neck and the three Millstone units on NU reports and NRC inspection findings referred to in the Petition and on a videotape in which a former Millstone Station employee expresses his views on NU management and plant conditions. As previously noted, based on the NRC staff review of these materials, the Petitioners have identified no new information.

With regard to the Millstone units, the units are currently in an extended shutdown and significant management changes at NU have been made in the past year. The NRC's focus is on evaluating improved performance, hardware and programmatic upgrades, and corrective actions. Specifically, NRC review and inspection emphasis will be directed toward the results of NU's actions to correct identified weaknesses in areas such as design controls, radiological controls, quality assurance, work control practices, corrective action processes, and the handling of employee concerns.

The previous discussion provides an overview of the Assessment Plans that the SPO has developed for assessing the adequacy of NU's corrective actions being taken prior to Commission approval of restart for any of the Millstone units. The NRC staff will have to reach a determination that the corrective actions taken by NU provide reasonable assurance that future operation will be conducted in accordance with the terms and conditions of the

operating license, the Commission's regulations, and the design basis, as documented in the FSAR, of each unit before recommending that the Commission approve the restart of any one of the units. Upon receipt of an NRC staff recommendation and a briefing on ongoing investigations, the Commission will hold a meeting to assess the recommendation and then vote on whether to approve the restart of each unit.

The restart process discussed for the Millstone units does not apply to Haddam Neck. The Licensee has certified to the NRC that operations at the facility have permanently ceased and that fuel has been permanently removed from the reactor.

The Petitioners' request to take immediate action was denied in the letter of January 23, 1997, which acknowledged receipt of the Petition. The request to suspend or revoke the licenses for the three Millstone units is denied based on the NRC staff's conclusion that such action is not warranted by the facts. Programmatic and review efforts are in place. If these efforts are successful, the NRC would allow the Millstone units to resume operation. The request to suspend or revoke the license to operate the Haddam Neck Plant is moot since the Licensee has certified to the NRC that the plant has permanently ceased operation and the fuel has been permanently removed from the reactor.

2. The Petitioners request that the NRC investigate the possibility that NU made material misrepresentations to the NRC concerning engineering calculations and other information or actions relied upon to assure the adequacy of safety systems at the Haddam Neck and Millstone reactors. The Petitioners said NU made possible material misstatements either through lack of rigor and thoroughness or by providing intentionally misleading information.

The NRC has ongoing investigations related to alleged wrongdoing by NU personnel. The investigative results will be reviewed for possible enforcement action. Depending on the results of the ongoing evaluations of inspections and investigations, both NU as an organization and NU employees found to have engaged in deliberate misconduct will be subject to appropriate enforcement action. Consistent with the General Statement of Policy and Procedures for NRC Enforcement Actions (NUREG-1600), some enforcement action is normally taken against a licensee for violations caused by significant acts of wrongdoing by its employees. Such action could include a civil penalty or an order. In deciding whether to also take action directly against the responsible employees, the NRC considers a number of factors such as the employee's level in the organization, the employee's training and experience, the degree of supervision, the employee's attitude, and the degree of management responsibility or culpability. A decision to take action directly against an individual is significant and normally will be taken only when the NRC is satisfied that the individual has engaged in deliberate misconduct. The action taken could include prohibiting the individual from involvement in licensed activities for a period of years.

As the NRC is currently evaluating alleged wrongdoing by NU personnel, the Petitioners' request is granted.

3. Petitioners request that the NRC revoke NU's operating licenses for the Haddam Neck and the Millstone Units 1, 2, and 3 reactors if an investigation determines that NU deliberately provided insufficient and/or false or misleading information to the NRC. If the NRC chooses not to revoke NU's licenses, the Petitioners specifically request that the reactors remain off-line until a United States Department of Justice (DOJ) independent

investigation is complete and the NRC reviews the conclusions and recommendations contained therein for potential consequences to the Licensee and its agents under NRC regulations. The Petitioners note in a footnote that a DOJ report will likely produce information essential to the NRC's evaluation of NU's management problems. The Petitioners further stated that such information should influence any NRC decision concerning NU's future operation of nuclear reactors in Connecticut.

Since the NRC investigations are ongoing, the NRC cannot respond to the first portion of the request to revoke the licenses of the three Millstone units at this time.

The response to the Petitioners' Request 1 applies to the part of Request 3 asking that the reactors remain off line until the investigations are complete. As noted, the Commission will consider the status of all ongoing investigations, including any referrals to DOJ, in its deliberations before voting on the restart of any of the Millstone units.

The part of the request relating to revoking the licenses of the three Millstone units is deferred until all investigations are complete. The request that the reactors remain off line until the investigations are complete is denied.

This request does not apply to the Haddam Neck Plant, which has already permanently ceased operation.

4. The Petitioners request that, if NRC chooses not to revoke NU's licenses to operate the Haddam Neck Plant and the Millstone Units 1, 2, and 3 reactors and allows the reactors to return to operation, the reactors remain on the NRC's Watch List to oversee reactor operations until NU management demonstrates to the NRC that:

- a. NU is able to fulfill NRC regulatory requirements;
- b. NU has met all prior commitments concerning the repair, modification, maintenance, and documentation of the nuclear power stations;
- c. NU has retrained all staff in the application and interpretation of NRC's regulations; and
- d. NU has removed from any positions of responsibility for operation and/or management of the reactors all persons whom DOJ, NRC, or other government investigators and/or civil or criminal prosecutions find to have made material misrepresentations to the NRC during the past decade of mismanagement.

Due to the significance and programmatic nature of the concerns evolving from the various NRC reviews and inspections at the Millstone Station and the fact that each unit is shut down pending resolution of these issues, the Commission put the Millstone units in Category 3 of the Watch List. Accordingly, restart of any of the units is subject to Commission approval. SIL issues, which require resolution for safe operation, will have been addressed and a process will be in place to resolve any deferred items. If the Commission approves restart of any unit, that unit will be placed in Category 2 of the Watch List, where it will remain until the Licensee has demonstrated that satisfactory operational performance can be sustained at the unit.

The restart process, as previously discussed, will assure that the management attributes identified by the Petitioners in Request 4.a, b, and c, will be adequately considered within the context of the SPO's Assessment Plans before the NRC staff recommends that the Commission allow the restart of any

unit. Request 4.d will be considered in the restart process when the Commission is briefed regarding investigation efforts and recommendations.

The request to retain the Millstone units on the NRC's Watch List, if the Commission approves restart, is granted. Any unit permitted to restart will be placed in Category 2 of the Watch List, where it will remain until the Licensee has demonstrated that satisfactory performance can be sustained at the unit. Request 4.a, b, c, and d will be considered as set forth above.

This request does not apply to the Haddam Neck Plant because the Haddam Neck Plant has permanently ceased operation. The NRC will continue its oversight of the defueled facility.

5. Petitioners request that, as a minimum, the NRC keep Haddam Neck and the Millstone 1, 2, and 3 nuclear reactors off line until NU's chronic mismanagement has been analyzed, remedial management programs have been implemented, and the NRC has evaluated and approved the effectiveness of the Licensee's actions. As a minimum, NU should:

- a. thoroughly analyze root causes for deficiencies in NU's FSARs, its documentation of licensing and design bases, its safety analysis, its engineering, its quality assurance, its as low as reasonably achievable (ALARA) programs, and other necessary or required documentation.
- b. create a complete, accurate FSAR—mere "reform" is impossible when the basic document is inadequate and inaccurate;
- c. reevaluate of any of its activities initiated under (or which NU should have initiated under) 10 CFR 50.59 in order to confirm the validity of such activities, particularly to determine the extent to which the FSAR does not match "as built" configurations. This

reevaluation requires more than a paper audit; it requires checking actual physical plant against the existing documentation, component by component and system by system and creating correct documentation where it is lacking and/or inadequate;

- d. institute and document an effective ALARA review of all operational and nonoperational activities that expose workers and/or the public to radiation;
- e. thoroughly document the root causes of NU's chronic and systemic mismanagement including, documentation of the NRC Region I inspection program's staff and management failures over the past decade to detect and deal with this problem;
- f. demonstrate, over a substantial period of time to the satisfaction of the NRC, NU's commitment to respect NRC regulatory requirements and consistently follow them;
- g. retrain all personnel involved in day-to-day operations so that they are thoroughly conversant with NRC regulations; and
- h. update and document Plant Design Change Requests (PDCRs) to include all changes to the reactor's design, and verification by the NRC staff of these design changes, with closeouts of PDCRs receiving the highest priority.

As previously noted, NRC regulatory oversight programs at the Millstone Station are based on the recognition that the Licensee is primarily responsible for demonstrating that corrective actions have been effectively implemented. Before the NRC staff can recommend that the Commission approve the restart of a Millstone unit, the Licensee must determine that the unit conforms with applicable NRC regulations, license conditions, and the FSARs and that applicable licensing commitments have been met. The Licensee's

conformance with NRC regulations, license conditions, and licensing commitments is fundamental to the NRC's confidence in the safety of licensed activities.

The significant actions that the NRC is taking to monitor the Licensee's activities have been discussed in detail earlier in this Decision. Based on that discussion, the actions requested in Request 5.a through h, with the exception of the part of 5.e relating to NRC staff performance, will be adequately addressed within the context of the SPO's Assessment Plan for each of the Millstone units.

With regard to Request 5.e, the part of 5.e relating to the performance of the NRC staff is beyond the scope of the 2.206 process and will not be addressed in the Director's Decision relating to this Petition. This issue has been referred to the NRC's OIG for action as appropriate.

The request to keep the Millstone units off line until the items identified in Request 5.a through h, with the exception of the part of Request 5.e relating to NRC's previous actions in dealing with the Licensee, is granted to the extent that the issues will be considered within the SPO's Assessment Plan for each of the units.

This request does not apply to the Haddam Neck facility, which has permanently ceased operation.

6. Petitioners request that, if NU decides to shut down any or all of the nuclear power reactors at issue herein with the intent to commence the decommissioning process, the NRC not permit any decommissioning or predecommissioning activity to take place until:

- a. all the documentation mentioned in earlier requests is available to the NRC and on site at the reactors;
- b. all personnel involved in the decommissioning process have been

retrained (or trained) in the use and interpretation of the applicable NRC regulations in Title 10 of the Code of Federal Regulations;

- c. the NRC has appropriately evaluated and replaced personnel and has restructured the NRC Region I inspection program, its management, and the supervising NRC directorate to eliminate the regulatory anarchy that plagued the Connecticut nuclear reactors during the past 10 years; and
- d. the NRC makes certain that NU does not employ any persons in management or operations who made material misrepresentations to the NRC about the status of operations, repairs, modifications, or maintenance of NU's Connecticut reactors.

On October 9, 1996, the owners of the Haddam Neck Plant stated that the Board of Trustees was considering a permanent shutdown of the plant, based on an economic analysis of operations, expenses, and the cost of replacement power. All fuel assemblies were removed from the reactor and placed in the spent fuel pool for temporary storage. By letter dated December 5, 1996, the Licensee certified to the NRC, pursuant to 10 CFR 50.82(a)(1)(i) and 10 CFR 50.82(a)(1)(ii), that it had determined to permanently cease operations at the Haddam Neck Plant and that the fuel had been permanently removed from the reactor. The Licensee further noted that a Post-Shutdown Decommissioning Activities Report (PSDAR) and the site-specific decommissioning cost estimate would be submitted in accordance with 10 CFR 50.82, "Termination of License." The PSDAR will be submitted to the NRC and a copy sent to the affected state(s) within 2 years after operations have permanently ceased. The report must include, among other things, a description of the planned decommissioning

activities and a schedule for their implementation. No major decommissioning activities may be performed until 90 days after the NRC receives the PSDAR.

The current activities at the site include the operation, monitoring, and maintenance of the spent fuel pool; radioactive waste management; radiological protection; and fire protection. These activities, including any activities relating to decommissioning, must be in compliance with the current license requirements, which apply when the reactor is defueled.

The degree of regulatory oversight required during decommissioning of a nuclear power reactor is considerably less than during its operational phase. When the reactor is operating, the fuel in the reactor core undergoes a controlled nuclear fission reaction that generates a high neutron flux and large amounts of heat. Safe control of the nuclear reaction involves the use and operation of many complex systems, adherence to operational limits, testing of components and systems to assure their operability, specified procedure adherence, and operator actions. Once the fuel has been permanently removed and temporarily stored in the spent fuel pool, the fuel is still highly radioactive and generates heat caused by radioactive decay. However, no neutron flux is generated and the fuel slowly cools as its energetic decay products diminish. Since the spent fuel is stored in a configuration that precludes the nuclear fission, no generation of new radioactivity can occur. However, the same areas of the facility contain radioactive contamination and those areas must still be controlled to minimize radiation exposure to personnel and to control the spread of radioactive material.

The NRC staff continues to be concerned about the failures of the Haddam Neck radiological controls program (which recently resulted in the unplanned exposure of two individuals), long-standing discrepancies in the calibration

of several radiation monitors that are used to monitor and control radiological effluent releases, and the inadequate control of radioactive material that resulted in the undetected release of contaminated equipment to a nonlicensed vendor.

In response, the NRC has taken comprehensive and significant actions to resolve concerns in the area of radiological controls, including the issuance of a CAL on March 4, 1997, confirming the Licensee's commitment to respond to the findings in Inspection Reports 50-213/96-12, dated December 19, 1996, and 50-213/97-02, dated March 21, 1997. The CAL restricts the Licensee from performing any radiological work except that required to maintain the plant in a safe configuration. The CAL identifies four significant activities required of the Licensee to bring its management and implementation of radiation control programs up to a standard acceptable to the NRC. The activities are to (1) identify, in writing, specific compensatory measures that the Licensee will establish to assure sufficient management control and oversight of ongoing or planned activities that require radiological controls; (2) engage the services of an independent assessor to assess the quality and performance of the Licensee's radiological control programs and their implementation; (3) by May 30, 1997, based on the results of that independent assessment, (a) identify problems, determine root causes, and develop broad-based and specific corrective actions; (b) identify performance measures that may be used to determine the effectiveness of radiological control programs; and (c) submit a plan and schedule to the Regional Administrator, NRC Region I, for implementing improvements in the radiological control programs; and (4) before eliminating any interim compensatory measures, meet with the Region I

Administrator to describe program implementation and performance improvements achieved or planned.

In summary, the NRC is following the decommissioning process as specified in 10 CFR 50.82, which requires that no major activities may be performed until 90 days after the NRC receives the PSDAR. The Licensee must comply with all the applicable operating license requirements in effect for the defueled reactor relating to activities currently being performed at the Haddam Neck Plant. Further, the NRC will take appropriate actions for any defueled reactor to assure compliance with its license and license conditions, such as the actions described above for the failure of adequate radiological controls at Haddam Neck. The Haddam Neck Plant is the only reactor that the Licensee has determined to permanently shut down and decommission.

The request to forbid decommissioning activities or predecommissioning activity at any NU nuclear power reactor until all the requested actions identified in the Petition, including items a, b and d, of Request 6, have been completed is denied for the reasons stated above. The NRC staff has determined that the NRC requirements that govern decommissioning and the activities being undertaken by the Licensee in response to the CAL are sufficient to assure that the activities at the Haddam Neck facility are being conducted in a safe manner. Request 6.c, relating to the performance of the NRC staff, is beyond the scope of the 2.206 process and will not be addressed in the Director's Decision relating to this Petition. This issue has been referred to the NRC's OIG.

7. The Petitioners request that the NRC commence an investigation into how it allowed the illegal situation at NU's Connecticut reactors to exist and to continue over a decade. Particularly, Petitioners request that the

Commission order its staff (directors of the responsible directorates, managers, and Region I management and staff) to answer the following questions, and hold these persons accountable for their answers and actions regarding the past 10 years at NU's Connecticut nuclear power reactors:

- a. What documents did Region I inspectors, their supervisors, and NRC Project Directors and Project Managers review during 10 years of NU's out-of-compliance operation?
- b. If NU provided documents that somehow deceived the Region I inspector, how does the information in these documents relate to the everyday workings and activities conducted during the otherwise undocumented decade of operations at the Millstone and Haddam Neck plants?
- c. How did Region I inspectors, their supervisors, and NRC Project Directorates and Managers find that NU was conducting operations in a way that keeps worker and public exposures to radiation ALARA when NU was not adequately documenting either its licensing basis or the basis of reactor operations?
- d. Knowing, as Region I inspectors must have known, of excessive worker exposures (for example, due to a long standing problem with leaking pipes as documented by an NU worker in the video tape provided with this Petition Exhibit A), how did the Region I inspectors certify that operations at the Millstone and Haddam Neck plants were being conducted ALARA? How did the supervisors, and those in the NRC Project Directorate, make the same certifications?
- e. During the undocumented decade, how did Region I inspectors, their supervisors, and NRC Project Directors and Managers manage to track

NU's activities at the Millstone and Haddam Neck plants under 10 CFR 50.59?

- f. To what extent have NRC Region I inspectors, their supervisors, and NRC Project Directors and Managers allowed the same type of problems to develop at other nuclear power reactors in New England (i.e., Maine Yankee, Pilgrim, Seabrook, Vermont Yankee, and Yankee Rowe)?
- g. Is there any connection between licensees employing Yankee Atomic Electric Company's consulting and engineering services and the serious problems with documentation and lack of compliance with the licensing and design bases nuclear power stations in New England or in other parts of the country?

This request is beyond the scope of the 2.206 process. It concerns the performance of the NRC staff and will not be addressed in the Director's Decision relating to this Petition. This request has been referred to the NRC's OIG.

8. In the amendment to the Petition, the Petitioners request that the NRC take the following actions to enforce its regulations against NU. As part of the 2.206 process, the NRC should provide copies of Haddam Neck's nitrogen calculations to the Petitioners and conduct an independent review to see if the calculations meet the requirements of 10 CFR Part 50, Appendix B. If Appendix B requirements were violated, the Petitioners are concerned that the Licensee cannot safely decommission the Haddam Neck Plant. Accordingly, NU's operating licenses for its Connecticut reactors should be revoked, and NU should not be permitted to commence decommissioning until it has complied with the conditions outlined in the main body of the original Petition. Finally, the Commission should inquire into the NRC staff's failure to discern this

situation and its continuing failure to enforce the terms and conditions of NU's license and NRC regulations.

As noted above, the assertion by the Petitioners that the calculations performed by the Licensee violated NRC requirements is a new issue not previously considered by the NRC staff.

The subject calculations were performed subsequent to an event at the Haddam Neck Plant that resulted in the formulation of a nitrogen bubble in the reactor vessel. The results of the calculations, which were one of several methods used to confirm the water level during the event, were discussed by the Licensee during a public predecisional enforcement conference held on December 4, 1996.

By letter dated July 3, 1997, the Licensee provided information, including the requested calculations, relating to the different methods used for determining the reactor vessel water level resulting from the nitrogen intrusion event. This information has been placed in the NRC's Public Document Room and the Local Public Document Rooms. The Petitioners were provided a copy of the calculations as an enclosure to a Petition status letter dated July 21, 1997, since the calculations are relevant to the Petitioners' concern, are not proprietary, and are in the public domain.

On September 5, 1996, while investigating the root cause of the undetected accumulation of nitrogen gas in the reactor vessel, the Licensee performed a special test (ST 11.7-197, "Determination of Reactor Vessel Level") to verify reactor vessel level. This test was necessary because the reactor vessel level indication system and the core exit thermocouples had been removed from service in accordance with the Licensee's refueling procedures. The reactor level measurement problem had been exacerbated by the

nitrogen gas intrusion, which displaced water from the reactor vessel into the pressurizer, resulting in an unquantified decrease in reactor vessel inventory. During the course of the event, the shift manager had requested that the worst-case (lowest) reactor vessel level achieved during the event be determined. As noted in NRC Inspection Report No. 50-213/96-80, "NRC Augmented Inspection Team Review of the Undetected Introduction of Nitrogen Gas into the Reactor Vessel During Plant Shutdown," the plant staff completed a preliminary analysis on September 4, 1996. It was further noted that, at the end of the onsite inspection activities, the Licensee had yet to complete a final volumetric inventory balance calculation. In the Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$650,000 issued on May 12, 1997, the Licensee was cited for failure to take timely corrective actions following the nitrogen intrusion event, including the failure to timely establish the actual lowest reactor vessel level resulting from the event.

Subsequently, the Licensee completed two calculations: (1) Calculation 96-MDE-1515-MY, "Reactor Vessel Level Determination," prepared on October 2, 1996, independently reviewed on November 1, 1996, and approved on November 5, 1996; and (2) Calculation 96-MDE-1536-MY, "Reactor Vessel Level Determination," prepared on October 4, 1996, independently reviewed on November 22, 1996, and approved on December 1, 1996. These calculations were performed consistent with the requirements of 10 CFR Part 50, Appendix B.

Also, during the December 4, 1996, predecisional enforcement conference, the Licensee presented the results of reactor vessel water level simulations, which were calculated using the RELAP5/MOD3 code. These simulation results were presented by the Licensee to corroborate, with a diverse methodology, the

lowest reactor vessel water level determined by Calculations 96-MDE-1515-MY and 96-MDE-1536-MY. The results of the RELAP5/MOD3 reactor vessel water level simulations presented by the Licensee during the predecisional enforcement conference were only used to corroborate and provide additional insight into the reactor vessel water level that had been determined through Calculations 96-MDE-1515-MY and 96-MDE-1536-MY. These two calculations had been independently reviewed and performed consistent with the applicable provisions in the Licensee's 10 CFR Part 50, Appendix B, "Quality Assurance Program," and are considered by the NRC staff to suffice to demonstrate the reactor vessel water level.

Under these circumstances, the RELAP5/MOD3 simulations were not required to have been independently verified.

Thus, the assertion by the Petitioners that the calculations discussed during the predecisional enforcement conference violated 10 CFR Part 50, Appendix B, requirements is unfounded and no further actions by the NRC are required. The part of Request 8 relating to the performance of the NRC staff is beyond the scope of the 2.206 process and will not be addressed in the Director's Decision relating to this Petition. This part of Request 8 has been referred to the NRC's OIG.

IV. CONCLUSION

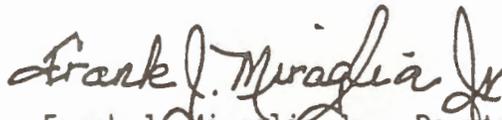
The NRC staff has determined, for the reasons provided in the above discussion, that: Request 2 is granted for both the Millstone units and the Haddam Neck Plant; Requests 4 and 5 are partially granted for the Millstone units; Request 1 and parts of Requests 3, 4, 6, and 8 are denied for the three Millstone units; Requests 6 and 8 are partially denied for the Haddam Neck

Plant; Request 3 is partially deferred for the three Millstone units; Requests 1, 3, 4, and parts of Request 5 are not applicable to Haddam Neck; and Request 7 and parts of Requests 5, 6, and 8 are beyond the scope of the 2.206 process and are not addressed. The deferred parts of Request 3 will be addressed in a Final Director's Decision after any possible wrongdoing is fully considered by the NRC staff.

As provided for in 10 CFR 2.206(c), a copy of this Partial Decision will be filed with the Secretary of the Commission for the Commission's review. This Partial Decision will constitute the final action of the Commission (for Petitioners Requests 1, 2, 5, 6, and 8) 25 days after issuance unless the Commission, on its own motion, institutes review of the Decision in that time.

Dated at Rockville, Maryland, this 12th day of September

FOR THE NUCLEAR REGULATORY COMMISSION



Frank J. Miraglia Jr., Deputy Director
Office of Nuclear Reactor Regulation

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Nuclear Information and Resource Service 1424 16th Street, NW, Washington, D.C. 20036 202-328-0002

November 25, 1996

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Mr. James Taylor,
Executive Director of Operations
U.S. Nuclear Regulatory Commission
Washington, DC 20555

OFF
FILE
ADJUTANT

PETITION FOR ENFORCEMENT, PURSUANT TO 10 CFR § 2.206, TO REVOKE NORTHEAST UTILITIES' OPERATING LICENSES FOR THE CONNECTICUT NUCLEAR POWER STATIONS DUE TO CHRONIC, SYSTEMIC MISMANAGEMENT RESULTING IN SIGNIFICANT VIOLATIONS OF NRC SAFETY REGULATIONS, AND TO INVESTIGATE THE NRC STAFF'S RESPONSIBILITY FOR NOT DEALING WITH THIS PROBLEM FOR OVER A DECADE

I SUMMARY RATIONALE FOR REQUESTED ACTIONS

In the interest of public health and safety, Citizens Awareness Network (CAN) and Nuclear Information and Resource Service (NIRS), petition the United States Nuclear Regulatory Commission (NRC), pursuant to 10 CFR § 2.206, to suspend or revoke Northeast Utilities' (NU) licenses to operate the Millstone Units 1, 2, 3, and Connecticut Yankee nuclear power stations due to over a decade of chronic, systemic mismanagement and violations of NRC regulations that have jeopardized occupational and public health and safety.¹

¹NU conducted an "in house" audit of the causes of the problems detailed in this petition. See Northeast Utilities System, *Event Response Team Report* (ACR 7007) (NRC Acc. No. 9603150021) (February 22, 1996). Until NU issued the report, the NRC took no definitive action to resolve the problems detailed therein, despite the blatant safety violations openly taking place on a daily basis for over 10 years!

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II. REQUESTED ENFORCEMENT ACTIONS

- A. Petitioners request that the NRC take the following actions to enforce its regulations against Northeast Utilities.
1. Petitioners request that the NRC immediately suspend or revoke Northeast Utilities' license to operate the Connecticut Yankee and Millstone nuclear reactors due to chronic, negligent management of the reactors which, for over a decade, has endangered and continues to endanger occupational and public health and safety and the environment due to resultant and cumulative major safety problems and violations of NRC regulations.
 2. Petitioners request that the NRC investigate the possibility that NU made material misrepresentations to the NRC concerning engineering calculations and other information or actions relied upon to assure the adequacy of safety systems at Connecticut Yankee and Millstone reactors, said possible material misstatements due to a lack of rigor and thoroughness, or as a result of providing intentionally misleading information.
 3. In the event that an investigation determines that Northeast Utilities deliberately provided insufficient and/or false or misleading information to the NRC, petitioners request that the NRC revoke Northeast Utilities' operating licenses for the Connecticut Yankee and Millstone Unit 1, 2 and 3 reactors. If the NRC chooses not to revoke the Northeast Utilities' licenses, the Petitioners specifically request that the reactors remain off-line until a United States Department of Justice independent investigation is complete and the NRC reviews conclusions and recommendations contained therein for potential consequences to the licensee and its agents under NRC regulations.²

²The Department of Justice report will likely produce information essential to the NRC's evaluation of NU's management problems. Such information should have a direct effect upon any NRC decision concerning NU's future operation of nuclear reactors in Connecticut.

4 In the event that the NRC chooses not to revoke Northeast Utilities' license to operate Connecticut Yankee and the Millstone Unit 1, 2, and 3 reactors and allows the reactors to return to operation, petitioners request that the reactors remain on the NRC "watch list" to oversee reactor operations until such time as NU management demonstrates to the NRC's satisfaction that

- a. NU is able to fulfill NRC regulatory requirements,
- b. NU has met all prior commitments concerning the repair, modification, maintenance, and documentation of the nuclear power stations,
- c. NU has retained all staff in the application and interpretation of NRC's regulations, and
- d. NU has removed from any positions of responsibility for operation and/or management of the reactors any and all persons whom the Department of Justice, NRC, or other government investigators and/or civil or criminal prosecutions find to have made material misrepresentations to the NRC during the past decade of mismanagement.

5 The Petitioners request that, at a minimum, the NRC keep Connecticut Yankee and the Millstone Units 1, 2, and 3 nuclear reactors off-line until the NU's chronic mismanagement has been analyzed, remedial management programs put into effect, and the NRC has evaluated and approved the effectiveness of the licensee's actions. At a minimum, this should entail

- a. A thorough analysis of root causes for deficiencies in NU's FSARs, documentation for licensing and design basis, safety analyses, engineering, quality assurance, ALARA programs, and other necessary or required documentation,
- b. Creation of a complete, accurate, updated FSAR--mere "reformat" is impossible when the basic document is inadequate and inaccurate.

- c Re-evaluation of any of NU's activities initiated under (or which NU should have initiated under) 10 CFR § 50.59 in order to confirm the validity of such activities, particularly to determine the extent to which the updated FSAR does not match "as built" reactor configurations. This requires more than a mere paper audit, and necessitates a component-by-component and system-by-system check of the actual physical plant against the existing documentation, and the creation of correct documentation where it is lacking and/or inadequate.
- d Institution and documentation of an effective ALARA review for all operational and non-operational activities which expose or potentially expose workers and/or the public to radiation;
- e Thorough documentation of the root causes of NU's chronic and systemic mismanagement--including documentation of the NRC Region I inspection program's staff and management failures over the past decade to detect and deal with this problem.
- f That NU demonstrates, over a substantial period of time to the satisfaction of the NRC, NU's commitment to respect NRC regulatory requirements and consistently put them into practice.
- g NU retrains all personnel involved in day-to-day operations so that they are thoroughly conversant with NRC regulations.
- h Updating and documentation of Plant Design Changes Requests to include all changes to the reactor's design, and that these design changes are verified by the NRC staff, with close-outs of PDCRs receiving the highest priority;

- B Petitioners request that, in the event that NU decides to shut-down any or all of the nuclear power reactors at issue herein with the intent to commence the decommissioning process, the NRC does not permit any decommissioning or pre-decommissioning activity to take place until such time as:
- 1 All of the documentation mentioned above is available to the NRC and on-site at the reactors;
 - 2 All personnel involved in the decommissioning process have been retrained (or trained) in the use and interpretation of the applicable NRC regulations contained in Title 10 of the Code of Federal Regulations.
 - 3 The NRC appropriately evaluates, replaces personnel, and restructures the NRC Region I inspection program, its management and the supervising NRC directorate to eliminate the regulatory anarchy that plagued the Connecticut nuclear reactors during the past ten years;
 - 4 The NRC makes certain that NU does not employ any persons in management or operations who made material misrepresentations to the NRC about the status of operations, repairs, modifications, or maintenance of NU's Connecticut reactors.
- C Petitioners request that the NRC commences an investigation into how it allowed the illegal situation at NU's Connecticut reactors to exist and continue for over a decade. Particularly, petitioners request that the Commission orders its staff (directors of the responsible directorates, managers, Region I management and staff) to answer the following questions, and hold these persons accountable for their answers and actions regarding the past 10 years at NU's Connecticut nuclear power reactors:
- 1 What documents did Region I inspectors, their supervisors, and NRC directorate oversight review during ten years of NU's out-of-compliance operation?

- 2 If NU provided documents that somehow deceived the Region I inspectors, how does the information in these documents relate to the actual everyday workings and activities conducted during the otherwise undocumented decade of operations at the Millstones and Connecticut Yankee?
- 3 How did Region I inspectors, their supervisors, and NRC directorate oversight find that NU was conducting operations in a way that keeps worker and public exposures to radiation As Low As Reasonably Achievable (ALARA) when NU was not adequately documenting either its licensing bases or the basis of reactor operations?
- 4 Knowing, as Region I inspectors must have known, of excessive worker exposures--for example, due to a long standing problem with leaking pipes as documented by an NU worker in the video tape provided with this petition Exhibit 'A'--how did the Region I inspectors certify that operations at the Millstones and Connecticut Yankee were being conducted ALARA? How did their supervisors, and those in the NRC directorate, make the same certifications?
- 5 During the undocumented decade, how did Region I inspectors, their supervisors, and NRC directorate oversight manage to track NU's activities at the Millstones and Connecticut Yankee under 10 CFR § 50.59?
- 6 To what extents have NRC Region I inspectors, their supervisors, and NRC directorate oversight allowed the same type of problems to develop at other nuclear power reactors in New England (i.e., Maine Yankee, Pilgrim, Seabrook, Vermont Yankee, and Yankee Rowe)?
- 7 Is there any connection between licensees employing Yankee Atomic Electric Company's consulting and engineering services and the existence of serious problems with documentation and lack of compliance with licensing and design bases at any New England area nuclear power stations or those in other parts of the country?

III RATIONALES FOR REQUESTED ACTIONS

For the past decade, NU mismanagement of the Millstone and Connecticut Yankee nuclear power stations has compromised the health and safety of workers and the public by subjecting them to increased risks of radiation exposure and the uncertainties of actual exposures on a daily basis, as well as subjecting them to an increased risk of death and illness during and following a major nuclear accident. During that period of time, NU has operated the Connecticut nuclear power stations in flagrant disregard of fundamental NRC regulations designed to assure that workers and the public are adequately protected from such risks. NU violated NRC regulations, despite a continuing responsibility to assure the safety of the most vulnerable members of the public (i.e., citizens living near the reactors, within the effluent pathways, and all those within a fifty mile radius of the reactors), protect NU workers, and safeguard its own assets (as a fiduciary obligation to its shareholders).

Over and over, during the decade of mismanagement, NU promised NRC Region I inspectors, their supervisors, and NRC directorate oversight that it would fulfill its obligations under NRC's regulations. NU's unfulfilled commitments--in writing, orally, and even under oath--include, but are not limited to, promises that NU would: (1) correct mistakes in reports and procedures, (2) correct mechanical and engineering deficiencies, (3) repair or replace equipment, (4) maintain and/or upgrade safety systems, (5) conduct

engineering and documentation evaluations under 10 CFR § 50.59 to justify tests, modifications, experiments, or changes made to any portion of the Connecticut reactors, and (6) maintain complete and proper documentation on the required safety systems of the reactor, its general operation, and technical specifications. These acts and omissions are, at a minimum, violations of 10 CFR § 50.4, § 50.5, § 50.59 and § 50.71.

Safe operation of a reactor necessitates that a licensee (such as NU) maintain a properly documented and completely updated Final Safety Analysis Report (FSAR), and routinely conduct full engineering and documentation reviews, pursuant to 10 CFR § 50.59 on proposed changes, tests, or experiments conducted in the course of any and all operations. *See, e.g.,* 10 CFR § 50.4, § 50.59, § 50.71. The implications of failing to meet such basic requirements are staggering.

The effectiveness of multiple back-up safety systems which the NRC requires of licensees under the "defense in depth" program approach, and basic assumptions relied upon in every probabilistic risk assessment (PRA) utilized to predict the degree of assurance provided by such safety systems, are swept away like a house of cards when a licensee (such as NU) operates without adequate documentation. This is more than mere paper shuffling. If it were just a matter of giving NU a bit more time to gather papers, the Commission could let NRC Region I take the usual casual approach.

However, the Region I casual approach to auditing operations at NU facilities permitted NU over a decade of operating and profiting from its Connecticut nuclear power stations without adequate evidence that operations met NRC regulations. A lack of documentation directly translates into a continuous elevated risk of radiation exposure to NU workers and the public, an unknown and yet to be determined amount of increased radiation exposure to workers, and a continuing risk that a combination of operator error and safety system failure will result in a major nuclear accident.

NU's Event Response team told NU, as the NRC now knows, that during the past decade NU did not maintain the required documentation at the Millstone Unit 1 nuclear station. The NRC has since learned of the same shoddy practices at the other Millstone reactors and Connecticut Yankee (Haddam Neck). This is a large part of the reason why petitioners have requested the NRC to take immediate action to halt all operations at the Millstone facilities until the required documentation is on file. NU's Event Response team told NU that:

Most of the engineers and managers contacted during [the Event Response Team analysis] (individuals who should be well-versed in design control requirements) have not read Title 10 of the Code of Federal Regulations [NRC Regulations], Regulatory Guides, or ANSI Standard pertinent to design control. There is a general lack of understanding and appreciation of the relationship and implications between 10 CFR 50, design basis (50.2), licensing basis, industry codes, and NU's administrative programs controlling configuration and design [of reactor operations]

Event Response Team, *Executive Summary* at 11 (emphasis added) The Event Response team report also states that:

Internal correspondence and events involving the design basis [e.g. NOVs, DERs, LERs] from 1985 through 1996 show a pattern of information communicated to NU management. This information consistently identified weaknesses and risks associated with the UFSAR [updated FSAR] and design basis.

Id. at 2 (emphasis added) This means that NU management had concrete particularized knowledge of serious on-going violations of NRC regulations. The Event Response Team Report further states that:

NU management made commitments on the docket to correct these deficiencies. The actions [of NU management] were ineffective, partially implemented, or not done.

Id. (Emphasis added) This means that although NU management had concrete, particularized knowledge of serious on-going safety violations of NRC regulations, it either acted ineffectively or did nothing at all. Therefore, it is axiomatic that when NU management knowingly led the NRC to believe that NU was taking effective action to come into compliance, or was in compliance with NRC safety regulations, NU was making material misrepresentations to the NRC, misrepresentations directly related to the safe management, maintenance, inspection, repair and operation of the Connecticut Yankee and Millstone facilities under the terms and conditions of NRC's license to NU to operate these nuclear power stations. Over and above all the underlying violations

of other portions of 10 CFR part 50 leading up to them, in and of themselves, such material misrepresentations violate NRC regulation 10 CFR §50.5 (deliberate misconduct), §50.54 (conditions of license), §50.55(a)(1) (requirement to meet codes and standards), and §50.71(e) (requirement to update FSAR and maintain §50.59 documentation). Although NU merely intended that the Event Response Team Report would identify problems at Millstone Unit 1, the Report stated that:

The long term pattern of decisions and actions [at Millstone Unit 1] has generic implications for Connecticut Yankee and Millstone Units 2 and 3. A sample of internal and external assessments and design events (e.g., IERs) for Units 2 and 3 and Connecticut Yankee, supports the potential for generic implications.

Id. at 8 (emphasis added). The Report goes on to state that the Team needed more data from each of the NU licensed facilities mentioned in order to determine the “full extent of the implications.” *Id.* Thus, NU’s own investigative team, without even having a complete picture of the extent to which the problems at Millstone Unit 1 apply to other NU operated nuclear reactors, recommended that NU should “conduct a verification effort similar to the Millstone Unit 1 effort for Millstone Units 2 and 3 and Connecticut Yankee.” *Id.* at 9.

Beyond the efforts that the NRC has already taken to try to deal with the problems described in NU’s in-house report, the Commission needs to direct its independent panel to examine each of the NOVs, DERs, and IERs over the past decade

to determine the actual physical status and documentation for all of the problems (and any of the changes, modifications, tests) at all of the Millstones and Connecticut Yankee, as well as the rest of the New England reactors--certainly any in which NU has an interest, as well as those serviced by NU's primary engineering contractors and consultants--and probably all of the nuclear power stations inspected by Region I.

This petition calls upon the Commission to face reactor licensee violations more pervasive and serious than any previously confronting the NRC. Not only do the decade-long, serious, chronic, systemic mismanagement problems at the Millstone and Connecticut Yankee nuclear power stations require action against NU, but the Commission must confront its own chronic, systemic failure to enforce its regulations. Specifically, the blatant, abject failure of regulatory oversight by the NRC NRR directorate management and staff, NRC Region I management, staff, inspectors, and other NRC administrators, management, and staff in failing to assure NU's compliance with NRC regulations.

¹Petitioners believe, as does the NRC, that NU's Connecticut problems may have infected other nuclear power reactors in New England. See S. Varga, Director NRC Division of Reactor projects, Letter to G. Cheney (NRC Acc. No. 9610090036) (October 7, 1996). It is not clear to what extent the company-side problems are strictly the responsibility of NU, or should be shared by any and all of the various consultants and contractors utilized by NU--such as Stone and Webster Engineering and Yankee Atomic Electric Company. Likewise, the NRC needs to take stock of all of the nuclear power stations under the inspection regime of NRC Region I, as well as those persons at headquarters to whom Region I reports, because Region I allowed NU to get away with dangerous, flagrant violations of NRC regulations for over 10 years!

In the event that the NRC determines that the root causes of Northeast Utilities' chronic, systemic mismanagement of its Connecticut nuclear reactors has jeopardized public health and safety, petitioners have requested the revocation or suspension of Northeast Utilities' licenses to operate these facilities until such time as the NRC Commissioners have reviewed and approved the recommendation of an independent panel appointed by the Commission that unequivocally recommends re-licensing or lifting the suspension.

In the event that the NRC determines that its staff (NRR, Region I, and any other NRC personnel involved) has systematically failed to enforce regulations, not carried out inspections which assured the completion of documentation, repairs, upgrades, maintenance, ALARA reviews and procedures, and any activities which licensees promised to accomplish pursuant to regulation or best practices, petitioners have requested that all such personnel be permanently removed from any positions involving oversight authority in reviewing, directing, supervising or carrying-out the NRC's regulatory requirements.

The bottom line on the failures of NU and NRC inspections described in this petition and the video Exhibit attached hereto is that these failures culminate in NU's Connecticut nuclear power stations having inconsistent and inaccurate Final Safety Analysis Reports.

The updated FSAR is the essential document for safe reactor operations. The FSAR demonstrates licensee compliance with NRC regulatory requirements by documenting all changes to a reactor from construction through operations and for the duration of the license. Along with the Technical Specifications, the FSAR provides a working blueprint against which a licensee may compare the day-to-day condition of the facility. This allows the licensee to be relatively certain that the reactor is operating safely, and efficiently plan for continued safe operation. By documenting modifications and repairs to a reactor, the FSAR allows a licensee to determine the need for additional design modifications and plan for necessary repairs and maintenance. In this way, the FSAR provides managers and engineers with a guide to determine how to retrain the work force. By encapsulating the history of physical modifications, repairs, and maintenance, the FSAR also protects workers from unnecessary exposure to radiation. It does this by providing a guide for licensees during the planning and reviewing process necessary to implement the NRC's mandatory ALARA standards in 10 CFR part 50 and Appendix I.

Because the FSAR is the blueprint which documents the history of changes to a reactor and its operation, consistent, timely updating is absolutely essential

The updated FSAR allows the licensee to maintain knowledge of the current condition of reactor operations, make information accessible to reactor staff, and allows staff to effectively handle both routine operations and abnormal events.

In the absence of an updated and accurate FSAR, nuclear power station managers, engineers, staff, employees and contractors lack information on how the reactor systems and components operate together. Changes occurring in the reactor design become difficult, if not impossible, to determine, and require case-specific investigation based upon inherently unreliable sources: individual, anecdotal memory. Likewise, absent an adequate, updated FSAR, discovering the impacts of design changes upon other systems requires such time-consuming, case-specific investigation. Under emergency conditions, it would be impossible for operators, engineers, and staff to immediately access the exact cause of a problem or understand the conditions they would find when attempting to make emergency repairs. A time-consuming, case-specific investigative process confronts staff precisely at the moment of crisis, when time is of the essence to avoid catastrophe.

A deficient FSAR prevents a licensee from adequately training and retraining workers. By having different and conflicting updates of the FSAR, workers may respond to the wrong condition or at a wrong location, leading to confusion and conflict in addressing both standard operation and abnormal occurrences. To the

extent that the deficient FSAR forces workers to rely on inherently unreliable anecdotal knowledge, such conflicts multiply as different managers, engineers, and operators recall different versions of what was done, where, how, and by whom. In an emergency situation, under these conditions, coordinated efforts by personnel are exceedingly difficult if not impossible.

Clearly, the anecdotal, case-by-case scenario for problem solving increases the likelihood of unnecessary worker exposure to radiation. Personnel cannot practice a "lessons learned" approach to problems under such conditions. The possibility of personnel conducting ALARA analyses is completely compromised under such conditions. Absence of an updated FSAR forces workers to constantly reinvent the wheel whenever problem situations confront them in areas of radioactive contamination. This directly translates into workers routinely exposed to higher doses of radiation than they would incur under proper ALARA practices.

Finally, and most significantly, absence of a properly updated FSAR forces the nuclear power station operators and other staff to function in a constant reactive or "crisis" mode. The result is personnel exercising poor judgment, suffering from excess stress, and making inferior decisions. This translates into higher employee absenteeism, higher turn-over, and lost experience. In this way, the demands placed upon operators and staff by the necessity of maintaining a high level of scrutiny of

worn and out-dated components and systems in an aging reactor are compound by the problems created when attempting to conduct operations with a deficient FSAR. Ultimately, under such conditions, engineers will find it more and more difficult to effectively calculate and set conservative limits on already deteriorating systems. This way, the process of deterioration will accelerate, eventually spiraling out of control.

- **Workers' and the public's health and safety are in constant jeopardy when the NRC allows licensees to operate nuclear reactors without an updated FSAR.**
- **Absent an updated, accurate FSAR, NRC inspectors have no way to determine that a reactor is in compliance with regulations and technical specifications.**

For these reasons, and in order to avoid the anarchic situations described above, the NRC makes a licensee's commitments to maintain an accurate and updated FSAR (and other necessary documentation) binding, legal requirements under NRC regulations

Each person licensed to operate a nuclear power reactor pursuant to the provisions of Sec. 50.21 or Sec. 50.22 of this part shall update periodically, as provided in paragraphs (e) (3) and (4) of this section, the final safety analysis report (FSAR) originally submitted as part of the application for the operating license, to assure that the information included in the FSAR contains the latest material developed. This submittal shall contain all the changes necessary to reflect information and analyses submitted to the Commission by the licensee or prepared by the licensee pursuant to Commission requirement since the submission of the original FSAR or, as appropriate, the last updated FSAR. The updated FSAR shall be revised to include the effects of: all changes made in the facility or procedures as described in the FSAR; all safety evaluations performed by the licensee either in support of requested license amendments or in support of conclusions that changes did not involve an unreviewed safety question, and all analyses of new safety issues performed by or on behalf of the licensee at Commission request. The updated information shall be appropriately located within the FSAR.

(1) The licensee shall submit revisions containing updated information to the Commission, as specified in Sec. 50.4, on a replacement-page basis that is accompanied by a list which identifies the current pages of the FSAR following page replacement

(2) The submittal shall include (i) a certification by a duly authorized officer of the licensee that either the information accurately presents changes made since the previous submittal, necessary to reflect information and analyses submitted to the Commission or prepared pursuant to Commission requirement, or that no such changes were made, and (ii) an identification of changes made under the provisions of Sec. 50.59 but not previously submitted to the Commission.

(3)(i) A revision of the original FSAR containing those original pages that are still applicable plus new replacement pages shall be filed within 24 months of either July 22, 1980, or the date of issuance of the operating license, whichever is later, and shall bring the FSAR up to date as of a maximum of 6 months prior to the date of filing the revision.

....
(4) Subsequent revisions shall be filed no less frequently than annually and shall reflect all changes up to a maximum of 6 months prior to the date of filing.
....

10 CFR § 50.71(e)(emphasis added) The rule makes patently clear the NRC's concern (and requirement!) that licensees have both updated FSAR and §50.59 analyses on hand

- **Without an updated FSAR in place, NRC staff had (and have) no basis for determining whether NU was in compliance with its technical specifications and NRC safety regulations.**

Thus, to the extent that NU failed to provide, and NRC staff failed to demand, an up-to-date and accurate FSAR for the Millstones and Connecticut Yankee, the NRC staff permitted NU to operate the reactors out of compliance with technical specifications and in violation of crucial NRC safety regulations

Recent NRC action has taken some initiative in attempting to isolate NRC Region I from a continuing role overseeing inspections of NU's nuclear facilities in Connecticut. While this is a beginning, it is hardly comforting to members of CAN and NIRS living throughout New England, where NRC Region I has supposedly been

inspecting other nuclear power stations. What assurance, if any, is there that NRC Region I has been vigilant outside Connecticut when it has so totally failed to do its job there?⁴

The Commission needs to conduct an audit of all NRC Region I inspections and NRC headquarters oversight of these inspections during the past decade to see if there are the same type of negligent inspection practices throughout NRC Region I as those documented in Connecticut and Maine.⁵ Moreover, to date, the licensee's responses

⁴See S. Varga, Letter to G. Cheney, *supra*, note 3.

⁵See NRC, *Independent Safety Assessment of Maine Yankee Atomic Power Company* at 1, 74 (October 7, 1996). Both the ISA and Office of the Inspector General found, in separate investigations, that NRC and its Region I inspection program were deficient in regulatory oversight of Maine Yankee for more than a decade. In its conclusions to the ISA report, the Team recommended that the NRC inspection program should be reviewed in the following areas:

- the licensee-implemented testing programs for safety systems relative to its scope, rigor, and analyses of results
- the periodic review of licensee developed Technical Specification interpretations to assure consistency with the intent of the approved Technical Specifications
- assessment of the adequacy of the plant design-basis including a review of the disposition of significant findings from previous licensee efforts such as design-basis documentation or design-basis reconstitution programs

Id. at 74. The striking similarities between the length and depth of the NRC's Maine Yankee problems and solutions, and the problems at the Connecticut nuclear reactors are a bit too close to pass off as mere coincidences. Clearly, the NRC needs to undertake some major housecleaning in order to assure that it is adequately protecting workers at NRC Region I reactor sites and the citizens living in reactor communities. Naturally, if the problems with NRR and NRC Region I are due to mismanagement, economic pressure, and other problems endemic to NRC programs,

have been insufficient. DERs, inspection reports, and other documents--as petitioners illustrate below--show an increasing number of serious problems emerging at an alarming rate. This means that NU has failed to address the root causes of the problems at the Millstones and Connecticut Yankee, and is merely attempting a cosmetic fix. To do the job right, the NRC must initiate a full-scale independent analysis of all reactor systems at NU's Connecticut facilities.

Even if NU decides to permanently close one of these nuclear reactors--as likely it will do with Connecticut Yankee--without such a massive audit and re-documentation, it would be unsafe to attempt to disassemble any portion of a nuclear power station. This is because an updated FSAR provides a blueprint for safe decommissioning. The same applies to the licensee having complete, accurate, and up-to-date 10 CFR §50.59 documentation. Absent these documents, there are no "specs" for a nuclear power station. No meaningful ALARA analysis and review can take place. Thus, decommissioning workers could easily receive extremely serious radiation exposures by entering highly contaminated areas of the plant, attempting to remove the wrong component, or attempting to undertake decontamination activities in a highly contaminated section of the facility. Furthermore, and fundamentally, without the

the problems "uncovered" at the Connecticut and Maine nuclear power stations probably exist at most of the nuclear power stations under NRC regulatory authority.

proper documentation, workers have no way of knowing how the nuclear power station was put together, so they cannot possibly take it apart safely.

The NRC must determine the root causes of such chronic, systemic mismanagement, because the recognized deficiencies presage potential widespread mismanagement compromising safe reactor operation. This applies with no less force to the same deficiencies in NRC regulatory oversight. The lack of documentation, inaccuracies in existing documents, and other serious lapses have occurred over decades, making it difficult to verify system compliance—whether one looks at the individual nuclear reactors at issue here, or the NRC Region I inspection program as a whole.

The NRC ordered a Connecticut Yankee shutdown because NU was operating the reactor outside technical specifications. The NRC's shutdown decision followed a series of NRC inspections and reportable event occurrences [documented in DERs] at the reactor. Among other safety problems, the inspections uncovered serious weaknesses and inaccuracies in NU's documentation for operating Connecticut Yankee, particularly NU's failure to maintain an accurate and completely updated Final Safety Analysis Report [FSAR]. The same problem existed at Millstone Unit 1, where NU's own in-house evaluation team found that management and engineering personnel were

not familiar with the NRC safety regulations contained in Title 10 of the Code of Federal Regulations.

The NU evaluation team also reported that Millstone Unit 1 management carelessly or knowingly neglected to follow-through on mandatory commitments to the NRC staff to assure that particular repairs, modifications, and documentation of changes to the reactor were actually taking place. The same NU evaluation team raised serious questions about mismanagement of Millstone Units 2, 3, and Connecticut Yankee.

IV. CHRONIC, SYSTEMIC PROBLEMS AT NU'S CONNECTICUT REACTORS

Petitioners contend that NU's Connecticut nuclear power reactors do not exhibit substantial improvement, despite NU's recent efforts to get them back on line. Management and operation at NU's Connecticut reactors continue to be dangerous, substandard, and generally outside NRC's regulations, as the examples cited herein illustrate. Petitioners believe that NU's admitted decade-long failure to maintain an updated FSAR for each reactor facility, epitomizes the seriousness of the current state of affairs at the Connecticut reactors.

Petitioners have assembled but a few of the incredibly numerous inspection reports, internal review documents, and licensee event reports for each of NU's Connecticut reactors. These documents raise serious concerns about the management

and operation of Connecticut Yankee and the Millstone Units I, II, & III nuclear power stations. In a letter to T. Feigenbaum, Chief Nuclear Officer for NU, William Russell, then NRC Director of Nuclear Reactor Regulation stated:

The team identified a number of significant deficiencies in the engineering calculations and analysis relied upon to ensure the adequacy of the design of key systems at Haddam Neck [Connecticut Yankee]. In some cases, design-basis calculations and analyses were not sufficient to confirm that the safety system functional requirements would be met. Some of these errors were long-standing, while others were recently introduced. Deficiencies were identified in the calculations and analyses supporting the station batteries, the emergency diesel generators, containment air recirculation system, service water system, and in the combination of systems and components needed to support the emergency cooling system ... transfer from the injection phase to sump recirculation.

....

These deficiencies revealed significant weaknesses in the defense-in-depth principles that the NRC relies on to ensure nuclear power plant operation does not jeopardize the health and safety of the public. The team concluded that weaknesses in your configuration management processes and a lack of technical rigor, thoroughness, and attention to detail in the design process, either contributed to or directly caused the identified errors. In addition, design control measures such as supervisory reviews, independent design reviews, and reviews by oversight committees did not identify these deficiencies

Inspection Report 50-213/96-201(emphasis added). The team identified several errors in the updated Final Safety Analyses Report (UFSAR) which reflected programmatic weakness in the process for maintaining the accuracy and consistency of the

information in the UFSAR. The team also found instances where NU's managers did not meet commitments to the NRC.

The team found several instances involving the failure to identify, evaluate, and correct conditions adverse to quality and some instances in which planned corrective actions were not promptly initiated. In some instances the delays in initiating planned corrective actions were significant because the actions included the evaluation of the potential generic implications of these issues for other plant systems and equipment.

Id. (Emphasis added). The inspection report goes on to note that the February 22, 1996, Event Response Team Report found process issues at Connecticut Yankee⁶ similar to those identified at Millstone 1.

[T]he team found that calculations did not exist to support some of the design-bases and the administrative control programs at Haddam Neck [Connecticut Yankee] had not maintained an accurate UFSAR...

.....

"These problems were not new to either NU or the NRC. *See generally*, J. F. Opeka, NU, Letter to T. Martin, NRC Region I (NRC Accession No. 9407130157) at 1,2 (July 5, 1994). During the first half of 1994, John F. Opeka, Executive Vice President, Connecticut Yankee Atomic Power Company (CYAP), had been exchanging letters with Thomas Martin, then Regional Administrator for NRC Region I, attempting to explain prior inaccurate statements concerning service water system problems. *Id.* These statements included: (1) reference to an "engineering evaluation" which Mr. Opeka subsequently admitted was really only a few "related informal discussions" and one engineer's statement that he would provide the welding department with any pipe needing replacement, (2) reference to testing of a weld when it was only subject to "visual" inspection, and (3) reference to all degraded welds being solely in the first nine feet of piping, when, in fact, "all 22 welds inspected (at that time) were degraded to some extent" *Id.* In Mr. Opeka's opinion these utter mischaracterizations were merely overstatements or "not accurate" or "could have been more clear." *Id.* Incredibly, it took two inspection reports and three letters before the NRC finally received this "clarification" from Mr. Opeka

[L.]licensee management oversight did not identify and address the patterns of corrective action program implementation problems... 'a general lack of understanding and appreciation for the relationship between 10 CFR 50, design-bases, licensing bases, industry codes, and NU's administrative programs existed'

Id. (emphasis added) Discussing Connecticut Yankee, NRC's Director of Division of Reactor Projects told NU that:

The discovery by design engineering that the service water piping supplying cooling water to the CAR fans would not remain functional under accident conditions was an example of an issue for which the design basis for the plant had not been thoroughly reviewed or understood

R. Cooper II, NRC, letter to T. Feigenbaum, NU (September 12, 1996) (emphasis added)

Other design basis issues discussed in the report included the reliance on high containment back pressure to assure reliable performance of the residual heat removal (RHR) system under postulated accident conditions and the adequacy of the containment sump screens to limit debris from entering the safety systems. These issues adversely impact the operability of emergency core cooling systems, thus undermining "defense in depth" against a core melt-down and the ensuing catastrophic release of radioactivity into the environment. The report identified these ultimate safety concerns as but two "apparent" violations of technical specifications

A. Inadequate Surveillance Testing⁷

MP1 DER 30821 (08/01/96) involving inadequate NPSH for the RHR pump during the long term cooling phase of an accident. The intent of the surveillance testing program for safety related equipment is to assure that these components will fulfill their required functions in an emergency. This DER demonstrates that the MP1 surveillance testing program was deficient.

MP2 DER 31196 (10/22/96) involving non-conservative reactor trip setpoints. The purpose of the surveillance testing program for safety related instruments is to assure that these components will perform as assumed in accident analyses. This DER demonstrates that the MP2 surveillance testing program was deficient and the plant safety analyses were invalid.

MP2 DER 30393 (05/01/96) involving a 32" x 9" hole (roughly the size of a large doggie door) in the auxiliary building wall near the spent fuel pool. This deficiency, reported as having existed for some time, demonstrates a significant deficiency in the surveillance testing program. Ignoring the fact that one might reasonably be expected to notice a gaping 32" x 9" hole, the auxiliary building is intended to be a radiologically controlled area and as such is subject to periodic testing. The auxiliary building is, or should have been, pressure tested to confirm that all releases are controlled and filtered as necessary. Such testing, had NU conducted it properly, should have detected problems reflective of a gaping hole.

MP3 31052 (09/24/96) involving nuclear instrumentation high power reactor trip testing not conforming to design and licensing bases assumptions. The intent of the surveillance testing program for safety related instruments is to assure that these components will perform as assumed in accident analyses. This DER demonstrates that the MP3 surveillance testing program was deficient and the plant safety analyses were invalid.

⁷In the following subsections, MPI, 2, 3 refer to the Millstone reactors, CY refers to the Connecticut Yankee (Haddam Neck) reactor. 'DER' refers to licensee Daily Event Reports to the NRC

B. Operating Outside Design Bases

MP1 DER 30821 (08/01/96) involving inadequate NPSH for the RHR pump during the long term cooling phase of an accident. This deficiency, apparently existing for years, meant that the reactor core would not have maintained adequate cooling following an accident. Since the RHR pumps also provide suppression pool cooling (containment cooling), this deficiency could also cause containment failure following an accident.

MP2 DER 31167 (10/16/96) involving flooding of the emergency diesel generator rooms through a common, connected floor drain line. This deficiency, apparently existing since the plant initially started up, represents a potential failure mechanism for all of the emergency diesel generators. Many other licensees, during the course of their Appendix R fire protection evaluations or in response to the Surry pipe rupture event in 1984, identified common floor drain line vulnerabilities such as reported in this DER. This DER demonstrates that the operational experience review program, mandated by the NRC following the TMI accident, is inadequate at Millstone.

MP2 DER 31085 (10/03/96) involving improper setting of the steam generator safety relief valves. This deficiency, apparently existing since the plant initially started up and made worse by the steam generator replacements, represents the potential for over pressurizing the steam generators, thereby invalidating the assumptions that a single tube rupture would not propagate. This DER demonstrates, among other things, that Millstone's design modification process is deficient because NU replaced the steam generators without detecting the existing problem or recognizing that the new steam generators would make the problem worse.

MP2 DER 30350 (04/23/96) involving a single failure that could render the enclosure building ventilation system inoperable. Plant safety analyses assume that one of the two redundant ventilation paths functions to filter containment releases. This deficiency, apparently existing for considerable time, challenges that assumption.

MP3 DER 31081 (10/02/96) involving a spent fuel pool design problem that could cause loss of spent fuel pool cooling after a seismic event. The NRC issued NRC Information Notice No. 93-81 in October 1993 alerting licensees to potential loss of spent fuel pool cooling following design bases events. This DER demonstrates that Millstone's operational experience review program, mandated by the NRC following the TMI accident, is inadequate.

MP3 DER 31062 (09/26/96) involving potential failure of 21 safety related air operated valves on loss of power causing diversion of safety injection flow and possible pump run-out. NRC Bulletin 88-xx specifically requires licensees to review the performance of safety related components for loss of instrument air. This DER demonstrates that Millstone's response to this NRC bulletin is less than adequate.

MP3 DER 31008 (09/16/96) involving failure of the safety related charging system if instrument air is lost. The charging system performs the essential function of core cooling following an accident. NRC Bulletin 88-xx specifically requires licensees to review the performance of safety related components for loss of instrument air. This DER demonstrates that Millstone's response to this NRC bulletin is less than adequate.

MP3 DER 30976 (09/06/96) involving failure of 37 solenoid valves upon failure of non-safety related air pressure regulators. The DER states that the solenoid valves effect many safety systems including the charging system and both the high and low pressure safety injection systems. NRC Bulletin 88-xx specifically requires licensees to review the performance of safety related components for loss of instrument air. This DER demonstrates that Millstone's response to this NRC bulletin is less than adequate.

C. Degraded Material Condition

CY DER 30945 (08/31/96) involving a pin hole leak in the RHR heat exchanger inlet isolation valve. Following a design basis loss of coolant accident, the RHR piping containing this isolation valve extends the reactor coolant pressure boundary outside primary containment. This identified integrity loss provides a pathway for radioactive material to bypass primary containment in the event of an accident.

MP3 DER 30897 (08/20/96) involving fouling of the containment re-circulation system heat exchangers by debris. The DER states that the fouling was thought to have occurred the previous month when system flow was increased to maximum. This DER demonstrates the potential failure of all components cooled by service water if the strainers and other protective measures have not been adequately designed to withstand maximum service water flow, as this DER apparently indicates. This potential may also apply to MP1 and MP2.

D. Problems Continuing at Connecticut Yankee After Shutdown

CY DER 31126 (10/09/96, 10/21/96) involving a 30-inch longitudinal crack on the water supply line to the spent fuel pool heat exchanger and a bad weld on a 6-inch service water return line from the spent fuel pool heat exchanger. The purpose of the supply line is described in this way:

The spent fuel pit cooling system removes residual heat from the spent fuel stored in the pit. The spent fuel pit pumps draw water from the pit, circulate it through a heat exchanger and return it to the pit. There are two spent fuel pool heat exchangers, a shell and tube type and a plate type. The plate heat exchanger has a greater heat removal capacity than the shell and tube heat exchanger.

Section 9.1.3.2 of the Connecticut Yankee Updated Final Safety Analysis. This DER raises the concern that the material condition of the system used to cool the irradiated fuel in the Connecticut Yankee (Haddam Neck) spent fuel pool may have degraded to the point that it is less likely to withstand the loadings imposed by a seismic event. In fact, the identified problems indicate that the material condition of the piping may have degraded to the point where it may be vulnerable to rupture under normal thermal and dead-weight loadings.

NRC Inspection Report 50-213/96-201 stated that the NRC's special investigation team into problems at Connecticut Yankee (Haddam Neck) found deficiencies which "revealed weaknesses [in systems] that the NRC relies on to ensure nuclear power plant operation does not jeopardize the health and safety of the public." *Id.* The team concluded that "weaknesses in your configuration management processes and a lack of technical rigor, thoroughness, and attention to detail in the design process, either contributed to or directly caused the identified errors." *Id.*

This inspection report in conjunction with recent de-staffing activities at Connecticut Yankee (Haddam Neck) raises the concern that appropriate safety margins may not exist or be maintained at the facility. NU's managers did not correct the weaknesses in the configuration management processes and the inattention to detail during the design process prior to the Configuration Management Project team disbanding. Consequently, there may not be a solid technical foundation to support prudent decisionmaking at this facility, particularly as both the NRC and NU continue to reallocate resources to the Millstone and Seabrook reactors.

E. Inadequate Quality Assurance Programs

Collectively, the documents summarized above provide persuasive evidence that the Quality Assurance programs at NU's Connecticut reactors are significantly flawed. NRC regulations at 10 CFR part 50, Appendix B, require NU to have Quality Assurance programs that assure maintenance of the original design bases and safety margins. These QA requirements include provisions for testing, auditing, configuration management, and design control. NU must develop an "effective" QA program. "Effective" means meeting the NRC's Appendix B requirements.

F. Material False Statements

The NRC issued 50.54(f) letters to NU in the spring of 1996, concerning all three Millstone nuclear power stations. NU maintained that the Millstone nuclear power stations met all applicable design and licensing bases requirements. The DERs cited above demonstrate that such statements were false at the time NU made them, and in some cases, have been false since the initial start-ups of the Millstone reactors. The same concerns apply to Connecticut Yankee.

G. Decommissioning And Design/Licensing Basis Deficiencies

The new NRC decommissioning rules will allow Connecticut Yankee (Haddam Neck) to conduct all of its major decommissioning activity under 10 CFR §50.59. 7

safely conduct activities under §50.59, the licensee must have its design and licensing bases in order. At a minimum, this means having an updated FSAR, and updated, accurate Technical Specification for any of the nuclear power stations which NU may decide to decommission.

The problem is that Connecticut Yankee's design and licensing bases are so defective that no one can really perform a valid §50.59 safety analysis. During the better part of 1996, staff and management at Connecticut Yankee were in the process of rebaselining the design and licensing bases in order to provide reasonable assurance to the NRC that it was safe to permit the reactor to restart. Despite the licensee's feverish activity, the NRC's special Inspection Report of July 31, 1996, documented extremely serious deficiencies in the areas of design and licensing bases. Thus, NU had not even come close to resolving these problems when it announced the shutdown of Connecticut Yankee and began drastic reductions in staffing levels at the reactor.

The point is that if the NRC decided that NU lacked sufficient knowledge of the licensing and design bases for staff and management at Connecticut Yankee to be able to safely restart the reactor, NU plainly does not have sufficient information to conduct decommissioning under 10 CFR §50.59 as the new rules allow. The same problem would, of course, apply were NU to attempt to shutdown and begin decommissioning at any of the other Connecticut reactors. Wherever deficiencies in the licensing and

design basis exist, safe decommissioning under §50.59 is not possible without adequate licensing and design bases.

V. ABOUT THE PETITIONERS

Citizens Awareness Network (CAN) is a non-profit, public interest group with members located near the Yankee Rowe reactor in Massachusetts, the Vermont Yankee reactor in Vernon, Vermont, the Connecticut Yankee and Millstone reactors in Connecticut, and the Seabrook reactor in New Hampshire. CAN is concerned with the entire nuclear fuel cycle from mining uranium, through operating nuclear power reactors, to establishing sites for disposal of radioactive waste. CAN represents citizens in many communities that experience the economic, environmental, and health impacts of the uranium fuel cycle. Since 1991, CAN has participated in a variety of NRC proceedings, including NRC hearings on reactor embrittlement and decommissioning, rulemakings, workshops, and adjudicatory hearings.

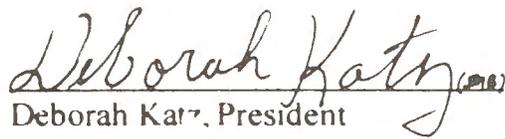
Nuclear Information and Resource Service (NIRS) is a nonprofit membership organization dedicated to providing information and assistance to people concerned about the effects of nuclear power, radioactive waste, and renewable energy alternatives to nuclear power. NIRS membership is world-wide, including Connecticut residents whose health and safety are a priority of this petition. Since 1978, from its headquarters in Washington, DC, NIRS has, among other activities, participated in nuclear regulatory affairs, including rulemakings, enforcement actions, and administrative and judicial adjudications on the regulation and licensing of particular nuclear power stations.

VI. CONCLUSION

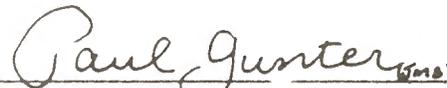
For the forgoing reasons, petitioners ask the United States Nuclear Regulatory Commission to grant this petition by immediately commencing: (1) enforcement action, as detailed above, against Northeast Utilities, and (2) an investigation, as detailed above, of the role of the NRC directorate management and staff (NRR), and Region I management and staff in permitting NU to operate its Connecticut nuclear power stations out of regulatory compliance for over a decade.

DATED: This 25th day of November, 1996

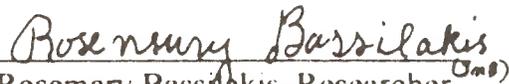
Respectfully submitted:



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December 23, 1996

Office of the Secretary
United States Nuclear Regulatory
Commission
Washington, D.C. 20055

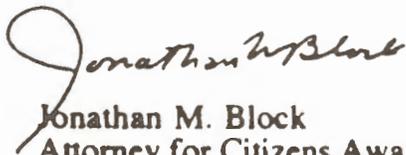
RE: Amendment to CAN's and NIR's 10 CFR 2.206 petition on NU's
mismanagement of its Connecticut reactors and the failure of the
NRC staff to enforce safety regulations for the past decade

Dear Mr. Hoyle,

Enclosed for filing with the Commission and the new EDO please find an
amendment to the 10 CFR 2.206 petition of CAN and NIR's concerning the
above referenced reactors dated November 25, 1996. My clients, Citizens
Awareness Network, Inc., and Nuclear Information and Resource Service request
that the Commission and EDO direct that this new document, filed pursuant to 10
CFR 2.206, is taken as a simple amendment to the petition already on file.

Thank you for your usual prompt attention to this matter.

Sincerely,



Jonathan M. Block
Attorney for Citizens Awareness Network, Inc.
and Nuclear Information and Resource Service

Enc./ Amendment to 10 CFR 2.206
on NU's Connecticut Reactors & etc.

cc: Deborah Katz, Paul Gunter

December 23, 1996

COPY

Chairman Jackson and the Commissioners of the
United States Nuclear Regulatory Commission, and the
Executive Director of Operations for the
U.S. Nuclear Regulatory Commission
Washington, DC 20555

**AMENDMENT TO CAN's and NIRS's PETITION FOR ENFORCEMENT,
PURSUANT TO 10 CFR § 2.206, TO REVOKE NORTHEAST UTILITIES'
OPERATING LICENSES FOR THE CONNECTICUT NUCLEAR POWER
STATIONS DUE TO CHRONIC, SYSTEMIC MISMANAGEMENT
RESULTING IN SIGNIFICANT VIOLATIONS OF NRC SAFETY
REGULATIONS, AND TO INVESTIGATE THE NRC STAFF'S
RESPONSIBILITY FOR NOT DEALING WITH THIS PROBLEM FOR
OVER A DECADE**

I SUMMARY RATIONALE FOR REQUESTED ACTIONS

In the interest of public health and safety, Citizens Awareness Network (CAN) and Nuclear Information and Resource Service (NIRS), hereby amend their November 25, 1996, petition the United States Nuclear Regulatory Commission (NRC), pursuant to 10 CFR § 2.206, to suspend or revoke Northeast Utilities' (NU) licenses to operate the Connecticut Yankee nuclear power stations due to violations of 10 CFR 50 Appendix B, and to prohibit NU from decommissioning any of its reactors until it has complied with the conditions specified in the main body of the original petition.

II. REQUESTED ENFORCEMENT ACTIONS

A. Petitioners request that the NRC take the following actions to enforce its regulations against Northeast Utilities:

1. As part of the 2.206 process, we request that you provide us with copies of CY's nitrogen calculations, and conduct an independent review to see if these calculations meet the requirements of 10 CFR 50 Appendix B. If they do not, this is just one more serious reason to conclude that CY still lacks the managerial wherewithal to safely conduct the decommissioning of the CY nuclear power station or continued operation of any of the Connecticut reactors. For this reason, we request that NU's operating licenses for its Connecticut reactors be revoked, and NU not be permitted to commence decommissioning until it has complied with the conditions outlined in the main body of the original petition. Moreover, the Commission should inquire into the NRC staff's failure to discern this situation, and continuing failure to enforce the terms and conditions of NU's license and NRC regulations.

III. RATIONALES FOR REQUESTED ACTIONS

A. **Nature of Problem**

1. At the November, 1996, enforcement conference, Connecticut Yankee informed the NRC that it had calculated the amount of nitrogen that entered the reactor coolant system and the amount of water that was displaced. Petitioners allege that NU only had draft calculations to support this statement, and that these calculations were neither finalized nor subjected to independent review to see if these calculations met the requirements of 10 CFR 50 Appendix B. These failures violate the terms and conditions of NU's operating license and NRC regulations. Additionally, the NRC's failure to discern this problem is yet another instance of continuing failure to enforce regulations against this licensee.

B. Possible Violation of Regulations

1. We believe that the calculations were never reviewed or approved as required by 10 CFR part 50 and Appendix B. The NRC regulations require that safety-related calculations be prepared by a qualified individual and reviewed by an independent qualified individual. Additionally, NRC staff failed to discern, and NU and its employees failed to disclose, that only draft calculations were used, and there was no independent verification of the engineering calculations concerning the nitrogen bubble problem.

C. Reason for Requested Action

1. CY has a history of not doing the required reviews. They may have some kind of draft calculations. Although it is certainly possible that the answers from any such draft calculations may in fact be correct and valid, the purpose for the requisite reviews is to ensure correctness. This is simply an application of the single failure criterion to human performance. Additionally, if the allegation contained herein is correct, it is yet another example of the NRC's failure to adequately monitor NU's license and demand conformity with its terms. The bottom line is that if the allegation is correct, the licensee's failure to adhere to the requirement of 10 CFR Part 50 and Appendix B, and the NRC's failure to enforce this portion of the regulations, creates a potential catastrophe for workers at Connecticut Yankee, persons living in the vicinity of the facility, and the natural environment in proximity to CY.

VI CONCLUSION

For the forgoing reasons, petitioners ask the United States Nuclear Regulatory Commission to grant this amendment by providing the requested information and immediately commencing: (1) an investigation of the need for immediate enforcement action against Northeast Utilities for violation of 10 CFR Part 50 and Appendix B, and

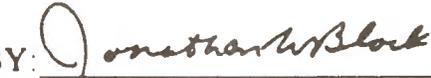
(2)an investigation of the role of the NRC directorate management and staff (NRR), and Region I management and staff in permitting NU to operate its Connecticut nuclear power stations out of regulatory compliance with 10 CFR Part 50 and Appendix B.

DATED: This 23th day of December, 1996

Respectfully submitted:

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