

DMB 016

December 19, 1986

Docket No. 50-336

DISTRIBUTION:

Docket File

NRC PDR

L PDR

FMiraglia

PBD#8 Rdg

BGrimes

PMKreutzer-3

DJaffe

OGC-Bethesda

EButcher

JPartlow

WRegan

LFMB

ACRS-10

WJones

TBarnhart-4

Gray Files 3.2a(4)

EJordan

LJHarmon/EWW360A

OPA

NThompson

Mr. John F. Opeka, Senior Vice President
Nuclear Engineering and Operations
Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06141-0270

Dear Mr. Opeka:

The Commission has issued the enclosed Amendment No. 114 to Facility Operating License No. DPR-65 for Millstone Nuclear Power Station, Unit No. 2, in response to your application dated September 26, 1986.

This change renumbers TS 3/4.9.3 "Decay Time" and incorporates the following new requirement in the TS: (1) a limiting condition for operation (LCO) and associated surveillance requirement (SR) addressing the need for fuel, newly discharged from the reactor at the end of the fuel cycle, to have a minimum decay time of 504 hours prior to suspending operability of the spent fuel pool cooling system, and (2) an LCO and SR to require that the reactor remain shutdown in Modes 5 or 6 until discharged fuel has achieved a decay time of 504 hours.

A copy of our Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next bi-weekly Federal Register notice.

Sincerely,

Original signed by

David H. Jaffe, Project Manager
PWR Project Directorate #8
Division of PWR Licensing-B

Enclosures:

1. Amendment No. 114 to DPR-65
2. Safety Evaluation

cc w/enclosures:

See next page

8701080623 861219
PDR ADOCK 05000336
P PDR

PBD#8
PKreutzer
12/11/86

PBD#8
DJaffe: lch
12/19/86

~~FOB~~
12/11/86

OGC
K. Bachmann
12/11/86

AT
PBD#8
ATHadani
12/11/86

Mr. John F. Opeka
Northeast Nuclear Energy Company

Millstone Nuclear Power Station
Unit No. 2

cc:

Gerald Garfield, Esq.
Day, Berry & Howard
Counselors at Law
City Place
Hartford, Connecticut 06103-3499

Mr. Wayne D. Romberg
Superintendent
Millstone Nuclear Power Station
P. O. Box 128
Waterford, Connecticut 06385

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
Office of Executive Director for
Operations
631 Park Avenue
King of Prussia, Pennsylvania 19406

Mr. Edward J. Mroczka
Vice President, Nuclear Operations
Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06141-0270

Mr. Charles Brinkman, Manager
Washington Nuclear Operations
C-E Power Systems
Combustion Engineering, Inc.
7910 Woodmont Avenue
Bethesda, Maryland 20814

Mr. Lawrence Bettencourt, First Selectman
Town of Waterford
Hall of Records - 200 Boston Post Road
Waterford, Connecticut 06385

Northeast Utilities Service Company
ATTN: Mr. Richard R. Laudenat, Manager
Generation Facilities Licensing
Post Office Box 270
Hartford, Connecticut 06141-0270

Kevin McCarthy, Director
Radiation Control Unit
Department of Environmental
Protection
State Office Building
Hartford, Connecticut 06106

Mr. Theodore Rebelowski
U.S. NRC
P. O. Box 615
Waterford, Connecticut 06385-0615

Office of Policy & Management
ATTN: Under Secretary Energy
Division
80 Washington Street
Hartford, Connecticut 06106



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

NORTHEAST NUCLEAR ENERGY COMPANY
THE CONNECTICUT LIGHT AND POWER COMPANY
THE WESTERN MASSACHUSETTS ELECTRIC COMPANY
DOCKET NO. 50-336
MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 114
License No. DPR-65

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northeast Nuclear Energy Company, et al. (the licensee), dated September 26, 1986 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

8701080629 861219
PDR ADOCK 05000336
P PDR

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-65 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 114, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Ashok C. Thadani, Director
PWR Project Directorate #8
Division of PWR Licensing-B

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 19, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 114

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain a vertical line indicating the area of changes. The corresponding overleaf pages are provided to maintain document completeness.

Remove Page

3/4 9-3

-

-

B 3/4 9-1

Insert Page

3/4 9-3

3/4 9-3a

3/4 9-3b

B 3/4 9-1

REFUELING OPERATIONS

DECAY TIME

LIMITING CONDITION FOR OPERATION

3.9.3.1 The reactor shall be subcritical for a minimum of 72 hours prior to movement of irradiated fuel in the reactor pressure vessel.

APPLICABILITY: MODE 6.

ACTION:

With the reactor subcritical for less than 72 hours, suspend all operations involving movement of irradiated fuel in the reactor pressure vessel.

SURVEILLANCE REQUIREMENTS

4.9.3.1 The reactor shall be determined to have been subcritical for at least 72 hours by verification of the date and time of subcriticality prior to movement of irradiated fuel in the reactor pressure vessel.

REFUELING OPERATIONS

DECAY TIME

LIMITING CONDITION FOR OPERATION

3.9.3.2 At least two trains of the spent fuel pool cooling system shall be OPERABLE.

APPLICABILITY: MODES 5 and 6 with the most recent 1/3 core offload* decayed less than 504 hours from subcriticality. This specification is not applicable if Shutdown Cooling is being used to cool the spent fuel pool.

ACTION:

With the above conditions not satisfied:

- a. Immediately initiate actions to restore both trains of spent fuel pool cooling, and
- b. Within one hour, suspend all fuel movement in the spent fuel pool, and
- c. Within one hour, isolate the spent fuel pool cleanup demineralizers.

SURVEILLANCE REQUIREMENTS

4.9.3.2 Within 24 hours prior to fuel movement into the spent fuel pool, and every 72 hours thereafter while this specification is applicable, verify that two trains of the spent fuel cooling system are OPERABLE.

*For the purposes of this specification, the most recent 1/3 core offload is defined as the fuel bundles discharged at the end of the most recent fuel cycle. This specification does not apply to partial mid-cycle discharges resulting from defective or damaged fuel if the total decay heat load on the spent fuel pool cooling system resulting from such a discharge is less than the total decay heat load of the spent fuel pool at 504 hours after subcriticality of the most recent 1/3 core offload.

REFUELING OPERATIONS

DECAY TIME

LIMITING CONDITION FOR OPERATION

3.9.3.3 The reactor shall be maintained in MODE 5 or 6 until the most recent 1/3 core offload* in the spent fuel pool has decayed for greater than 504 hours from subcriticality.

APPLICABILITY: MODES 5 and 6 with the most recent 1/3 core offload* decayed less than 504 hours from subcriticality.

ACTION:

With the above conditions not satisfied, immediately initiate actions to restore the reactor to MODE 5 or 6.

SURVEILLANCE REQUIREMENTS

4.9.3.3 Within 24 hours prior to entry into MODE 4, verify that the most recent 1/3 core offload* has decayed for greater than 504 hours from subcriticality.

*For the purposes of this specification, the most recent 1/3 core offload is defined as the fuel bundles discharged at the end of the most recent fuel cycle. This specification does not apply to partial mid-cycle discharges resulting from defective or damaged fuel if the total decay heat load on the spent fuel pool cooling system resulting from such a discharge is less than the total decay heat load of the spent fuel pool at 504 hours after subcriticality of the most recent 1/3 core offload.

REFUELING OPERATIONS

CONTAINMENT PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment penetrations shall be in the following status:

- a. The equipment door closed and held in place by a minimum of four bolts or the outage equipment door is installed,
- b. A minimum of one door in each airlock is closed, and
- c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:
 1. Closed by an isolation valve, blind flange, manual valve, or special device, or
 2. Be capable of being closed by an OPERABLE automatic containment purge valve.

APPLICABILITY: During CORE ALTERATIONS or movement of irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel in the containment.

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment penetrations shall be determined to be either in its isolated condition or capable of being closed by an OPERABLE automatic containment purge valve within 72 hours prior to the start of and at least once per 31 days during CORE ALTERATIONS or movement of irradiated fuel in the containment by:

- a. Verifying the penetrations are in their isolated condition, or
- b. Testing the containment purge valves per the applicable portions of Specification 4.6.3.1.2.

3/4.9 REFUELING OPERATIONS

BASES

3/4.9.1 BORON CONCENTRATION

The limitations on reactivity conditions during REFUELING ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the accident analyses.

3/4.9.2 INSTRUMENTATION

The OPERABILITY of the source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core.

3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

The requirement for two trains of spent fuel pool cooling to be OPERABLE for 504 hours after subcriticality for the most recently discharged 1/3 core ensures that high water temperature will not degrade resin in the spent fuel pool demineralizers and that the temperature and humidity above the pool are compatible with personnel comfort and safety requirements. The shutdown cooling (SDC) system is a high capacity system. One train of the SDC is sufficient to cool both the core and the spent fuel pool should a failure occur in the spent fuel pool cooling system.

The requirement for the reactor to remain in MODE 5 or 6 until the most recent 1/3 core offload has decayed 504 hours ensures that alternate cooling is available during this time to cool the spent fuel pool should a failure occur in one train of the spent fuel pool cooling system.

3/4.9.4 CONTAINMENT PENETRATIONS

The requirements on containment penetration closure and OPERABILITY ensure that a release of radioactive material within containment will be restricted from leakage to the environment. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE.

3/4.9.5 COMMUNICATIONS

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity condition during fuel or CEA movement within the reactor pressure vessel.

REFUELING OPERATIONS

BASES

3/4.9.6 CRANE OPERABILITY - CONTAINMENT BUILDING

The OPERABILITY requirements of the cranes used for movement of fuel assemblies ensures that: 1) each crane has sufficient load capacity to lift a fuel element, and 2) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE BUILDING

The restriction on movement of loads in excess of the nominal weight of a fuel assembly and CEA over irradiated fuel assemblies ensures that no more than the contents of one fuel assembly will be ruptured in the event of a fuel handling accident. This assumption is consistent with the activity release assumed in the accident analyses.

3/4.9.8 SHUTDOWN COOLING AND COOLANT CIRCULATION

The requirement that at least one shutdown cooling loop be in operation ensures that (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 140°F as required during the REFUELING MODE, and (2) sufficient coolant circulation is maintained through the reactor core to minimize the effects of a boron dilution incident and prevent boron stratification.

The requirement to have two shutdown cooling loops OPERABLE when the refuel pool is unavailable as a heat sink ensures that a single failure of the operating shutdown cooling loop will not result in a complete loss of decay heat removal capability. With the reactor vessel water level at or above the vessel flange, the reactor vessel pit seal installed, and a combined available volume of water in the refueling pool and refueling water storage tank in excess of 370,000 gallons, a large heat sink is readily available for core cooling. Adequate time is thus available to initiate emergency procedures to provide core cooling in the event of a failure of the operating shutdown cooling loop.

3/4.9.9 and 3/4.9.10 CONTAINMENT RADIATION MONITORING AND CONTAINMENT PURGE VALVE ISOLATION SYSTEM

The OPERABILITY of these systems ensures that the containment purge valves will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of these systems is required to restrict the release of radioactive material from the containment atmosphere to the environment.

3/4.9.11 and 3/4.9.12 WATER LEVEL-REACTOR VESSEL AND STORAGE POOL WATER LEVEL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gas activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the accident analysis.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 114 TO DPR-65

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

INTRODUCTION

By application for license amendment dated September 26, 1986, Northeast Nuclear Energy Company, et al. (the licensee), requested changes to the Technical Specifications (TS) for Millstone Unit 2. The proposed changes would renumber TS 3/4.9.3, "Decay Time" and incorporate the following new requirement in the TS: (1) a limiting condition for operation (LCO) and associated surveillance requirement (SR) addressing the need for fuel, newly discharged from the reactor at the end of the fuel cycle, to have a minimum decay time of 504 hours prior to suspending operability of the spent fuel pool cooling system; and (2) an LCO and SR to require that the reactor remain shutdown in Modes 5 or 6 until discharged fuel has achieved a decay time of 504 hours.

DISCUSSION AND EVALUATION

On January 15, 1986, the NRC issued Amendment No. 109 to Facility Operating License No. DPR-65 for Millstone Unit 2. The amendment revised the TS to allow an increase in the spent fuel storage capability from 667 to 1112 fuel assemblies. In the safety evaluation associated with Amendment No. 109, the NRC staff concluded that the existing TS should be supplemented by requirements to limit the temperature in the spent fuel pool to 140°F. In their letter dated November 27, 1985, the licensee had previously committed to submitting a proposed TS change. The application dated September 26, 1986 satisfies the licensee's commitment.

The proposed changes to the TS would require a combination of equipment to be operable, for spent fuel pool cooling, for at least 504 hours, which provides sufficient capacity to limit the spent fuel pool temperature to 140°F. Following the 504 hour period, the spent fuel pool temperature can be maintained below 140°F with a reduced complement of cooling equipment. The temperature limit of 140°F is specified in Standard Review Plan 9.1.3, "Spent Fuel Pool Cooling and Cleanup System," and is partly based upon the need to protect the resins, used in the spent fuel pool cleanup system, from

8701090632 861219
PDR ADOCK 05000336
P PDR

excessive temperatures. In addition, the reactor would be required to be in shutdown until the most recently discharged fuel achieves a decay time of 504 hours.

The proposed changes to the TS represent additional requirements that were not previously contained in the TS. Our review indicates that the proposed limits on minimum fuel decay time and operability of a specified spent fuel pool cooling capability provides assurance that the bulk spent fuel pool temperature will be limited to below 140°F. Accordingly, we find the proposed changes to TS 3/4.9.3, and the associated changes to the Bases, to be acceptable.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or in a surveillance requirement. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously published a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR §51.22(c)(9). Pursuant to 10 CFR §51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

CONCLUSION

We have concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: December 19, 1986

Principal Contributor: D. H. Jaffe