January 18, 1989

Docket No. 50-336

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

Dear Mr. Mroczka:

SUBJECT: MILLSTONE UNIT 2 - PROPOSED CHANGE TO TECHNICAL SPECIFICATIONS (TS) REGARDING USE OF ANF FUEL

The Commission has forwarded the enclosed "Notice of Consideration of Issuance of Amendment to Facility Operating License and Proposed No Significant Hazards Consideration Determination and Opportunity for Hearing" to the Office of the Federal Register for publication.

This notice relates to your November 15, 1988 application to change the Technical Specifications to reflect a revised safety analysis that includes the use of fuel designed and fabricated by Advanced Nuclear Fuels Corporation (ANF).

Sincerely,

/s/

David H. Jaffe, Project Manager
Project Directorate I-4
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

DISTRIBUTION
Docket File
NRC PDR
Local PDR
Plant File
S. Varga (14E4)
B. Boger (14A2)
S. Norris
D. Jaffe
OGC
D. Hagan (MNBB 3302)
ACRS (10)
GPA/PA

LA:PDI-4	PM:PDI-4	PD:PDI-4
SNorris	DJaffe:lm	JStolz
01/17/89	01/17/89	01/18/89

cc:

Gerald Garfield, Esquire
Day, Berry and Howard
Counselors at Law
City Place
Hartford, Connecticut 06103-3499

W. D. Romberg, Vice President
Nuclear Operations
Northeast Utilities Service Company
Post Office Box 270
Hartford, Connecticut 06141-0270

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

Bradford S. Chase, Under Secretary
Energy Division
Office of Policy and Management
80 Washington Street
Hartford, Connecticut 06106

S. E. Scace, Station Superintendent
Millstone Nuclear Power Station
Northeast Nuclear Energy Company
Post Office Box 128
Waterford, Connecticut 06385

J. S. Keenan, Unit Superintendent
Millstone Unit No. 2
Northeast Nuclear Energy Company
Post Office Box 128
Waterford. Connecticut 06385

R. M. Kacich, Manager
Generation Facilities Licensing
Northeast Utilities Service Company
Post Office Box 270
Hartford, Connecticut 06141-0270

D. O. Nordquist
Manager of Quality Assurance
Northeast Nuclear Energy Company
Post Office Box 270
Hartford, Connecticut 06141-0270

Regional Administrator
Region I
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

First Selectmen
Town of Waterford
Hall of Records
200 Boston Post Road
Waterford, Connecticut 06385

W. J. Raymond, Resident Inspector
Millstone Nuclear Power Station
c/o U. S. Nuclear Regulatory Commission
Post Office Box 811
Niantic, Connecticut 06357

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

7590-01

UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHEAST NUCLEAR ENERGY COMPANY

DOCKET NO. 50-336

NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE AND PROPOSED NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION AND OPPORTUNITY FOR HEARING

The U. S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. DPR-65, issued to Northeast Nuclear Energy Company (the licensee), for operation of the Millstone Nuclear Power Station, Unit 2, located in New London County, Connecticut.

The proposed amendment would allow operation of Millstone Unit 2 for Cycle 10. The changes to the Technical Specifications (TS) are required to reflect a revised safety analysis that includes the use of fuel designed and fabricated by Advanced Nuclear Fuels Corporation (ANF). Fuel designed and fabricated by ANF has not been previously utilized for Millstone Unit 2.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the request for amendment involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

As part of the licensee's submittal dated November 15, 1988, the licensee/(or NNECO) has addressed the various technical issues related to the "No Significant Hazards Consideration" criteria of 10 CFR 50.92. The licensee has stated that the proposed changes to the TS would not:

1. Involve a significant increase in the probability or consequences of an accident previously analyzed.

   ANF reviewed all SRP Chapter 15 accidents and transients to determine which events need to be reanalyzed for Cycle 10, assuming a mixed core or a core containing only ANF fuel. As a result, ANF reanalyzed all of the nonradiological events currently in Chapter 14 of the Millstone Unit No. 2 FSAR. On the basis of this review, NNECO concludes that there is no significant increase in the probability or consequences of any of these events.

   With respect to calculated consequences, ANF specifically reanalyzed the impact of the events on relevant key parameters associated with the plant response to the event (i.e., assessments of consequences were not restricted to dose assessments). The parameters analyzed all relate to the boundary performance during the accident. In all cases, the values of the relevant parmeters remain below applicable acceptance criteria and there are no impacts on the protective boundaries. NNECO therefore concludes that the proposed amendment does not involve a significant increase in consequences of any event previously analyzed.

   Specifically, both large- and small-break LOCA safety analyses were performed to support the proposed amendment. The results of the large-break ECCS analysis indicated that the limiting break size is the 0.6 [double ended cold leg guillotine (DECLG)] break. The maximum peak clad temperature (PCT) for the DECLG, including consideration of end-of-cycle coastdown, is 2176°F. This PCT value remains within the ECCS acceptance criteria of 10 CFR 50, Appendix K.

   The small-break LOCA analysis indicated the limiting break size, with symmetric steam generator tube plugging, is the 1.9% break. The PCT for this case was calculated to be 1811°F with a maximum local cladding oxidation of 4.17%. The results for asymmetric steam generator tube plugging at the limiting break size are similar to the results for symmetric tube plugging, with the PCT being slightly higher for the symmetric tube plugging case. Again, these values remain well within the Appendix K ECCS acceptance criteria.

The steamline break analysis involved a calculation of the expected asymmetric thermal hydraulic and neutronic core characteristics resulting from this accident. Specifically, fuel response was evaluated against fuel failure criteria for four scenarios, assuming both availability of off-site power and loss of off-site power. The hot zero power (HZP) scenario with loss of off-site power was determined to be the most limiting in this analysis from an MDNBR standpoint. In no scenario evaluated, however, does fuel failure occur as a result of penetration of the MDNBR safety limit. An HZP scenario with off-site power available was determined to be the most limiting in the analysis from the standpoint of centerline melt. However, again this case does not represent a significant increase in consequences as there remains margin to the fuel centerline melt limit (maximum LHGR).

Finally, a non-LOCA transient event analysis was also performed in support of Millstone Unit No. 2 operation with ANF reload fuel, and a disposition of events for Cycle 10 provided in the SAFETY ASSESSMENT. All anticipated operational occurrences were shown to result in no significant increase in either DNB, fuel centerline melt, deposited enthalpy, or radiological consequences. The postulated accidents were also shown to meet all appropriate acceptance criteria. With respect to the fuel centerline melt, deposited enthalpy and radiological consequences, the rod ejection and rod withdrawal from subcritical accidents show increases in consequences due to the increase in rod worth related to the increase in shutdown margin and also due to the increase in the allowable radial peaking factor. However, ...these increases are not significant in that they do not challenge the acceptance criteria for deposited enthalpy, fuel centerline melt, or off-site doses due to fuel failure. With respect to DNB, the increases are not significant in that they do not violate the 95/95 acceptance criteria. In total, therefore, NNECO concludes that the proposed change does not involve a significant increase in consequences of any accident previously analyzed.

With respect to probability of an accident previously analyzed, there is no change in the probability of occurrence of any design basis accident. Further, there are no changes or failure modes associated with the proposed amendment that will increase the probability of an accident to the point where it should be considered within the design basis. Therefore, in this respect, no significant hazard consideration is involved.

2. Create the possibility of a new of different kind of accident from any perviously analyzed.

As a result of the proposed use of ANF fuel and the proposed amendment, there will be no change to plant response. The plant will respond for all events in a manner similar to that previously analyzed.... The only changes identified in the reanalysis of Chapter 14 events relate to the impact of certain transients on parameters related to boundary performance. There are no changes to the basic trends the transients follow.

Thus, there are no failure modes associated with the proposed change that could represent a new unanalyzed accident.

In addition, there is no change in the probability of occurrence of any design basis accident. There are also no changes or new failure modes associated with the changes that will increase the probability of an accident or transient to the point where it should be considered to be within the design basis. Therefore, NNECO concludes that the proposed changes do not create any new or different kind of accident from those previously analyzed.

3. Involve a significant reduction in any margin of safety.

As discussed above, the accident reanalysis performed to support the proposed change included all nonradiological events currently in Chapter 14 of the Millstone Unit 2 FSAR. The analysis specifically focused on the impact of these accidents and transients on key parameters related to protective boundary performance. On the basis of this review, NNECO is able to conclude that the proposed amendment does not involve a significant reduction in any margin of safety.

Specifically, as discussed above, the proposed changes do involve some nonsignificant changes in consequences. This is reflected in the change in some parameters relative to Technical Specification bases. However, these changes are largely due to (a) methodology differences between the accident analyses performed by the previous vendor, Westinghouse, and that of the new vendor, ANF; (b) changes to or deletion of an LCO or LSSs, resulting in a corresponding change in Technical Specification bases; and (c) minor clarifications. However, in all cases where there are increases in the limiting value of a parameter, the value remains below the applicable safety limit and therefore does not affect the ability of the boundary to perform its function.

The changes in boundary parameters, discussed above, may be summarized as follows:

- The limiting large break LOCA resulted in a PCT of 2163°F. The PCT for a 12°F reduction in primary coolant temperature resulted in a PCT of 2176°F. These values do not involve a significant reduction in margin for any acceptance criterion.

- The limiting small break LOCA resulted in a PCT of 1811°F, with symmetric steam generator tube plugging. The PCT with asymmetric plugging was slightly lower. These values do not involve a reduction in any acceptance limit.

- Fuel response was evaluated for the steam line break events. In no scenario evaluated was fuel failure calculated to occur as a result of exceeding the MDNBR acceptance limit or the maximum LHGR.

- The rod ejection and rod withdrawal from subcritical accidents result in increases in relevant parameters due to the proposed increase in rod worth and the increase in the allowable radial peaking factor. However, as discussed above, there is no reduction in margin of safety because the parameters do not exceed existing acceptance criteria for deposited enthalpy, fuel centerline melt, or for off-site doses due to fuel failure.

- Accidents with DNB criteria may show consequence increase due to the need to rely on statistical methodologies. However, there is no reduction in the margin of safety because the 95/95 acceptance criteria is met in all cases.

In summary, the proposed amendment does not involve any significant reduction in a margin of safety and, therefore, does not involve a significant hazard consideration.

The NRC staff has reviewed and concurs in the licensees "No Significant Hazard Consideration" findings; therefore, based on the above considerations, the Commission has made a proposed determination that the amendment request involves no significant hazards considerations.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination. The Commission will not normally make a final determination unless it receives a request for a hearing.

Written comments may be submitted by mail to the Regulatory Publications Branch, Division of Freedom of Information and Publications Services, Office of Administration and Resources Management, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, and should cite the publication date and page number of this FEDERAL REGISTER notice. Written comments may also be delivered to Room P-216, Phillips Building, 7920 Norfolk Avenue, Bethesda, Maryland from 7:30 a.m. to 4:15 p.m. Copies of written comments received may be examined at the NRC Public Document Room, the Gelman Building, 2120 L Street, N.W., Washington, D.C. The filing of requests for hearing and petitions for leave to intervene are discussed below.

By February 23, 1989 , the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written petition for leave to intervene. Request for a hearing and petitions for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR §2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) the nature of the petitioner's right under the Act to be made party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party

may amend the petition without requesting leave of the Board up to fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter, and the bases for each contention set forth with reasonable specificity. Contentions shall be limited to matters within the scope of the amendments under consideration. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination on the issue of no significant hazards considerations. The final determination will serve to decide when the hearing is held.

If the final determination is that the request for amendment involves no significant hazards considerations, the Commission may issue the amendment and make it effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

If a final determination is that the amendment involves significant hazards considerations, any hearing held would take place before the issuance of any amendment.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards considerations. The final determination will consider all public and State comments received. Should the Commission take this action, it will publish a notice of issuance and provide for opportunity for a hearing after issuance. The Commission expects that the need to take this action will occur very infrequently.

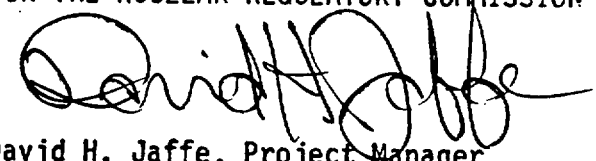
A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Service Branch, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, N.W., Washington, DC, by the above date. Where petitions are filed during the last ten (10) days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at 1-(800) 325-6000 (in Missouri 1-(800) 342-6700). The Western Union operator should be given Datagram Identification Number 3737 and the following message addressed to John F. Stolz: (petitioner's name and telephone number), (date petition was mailed), (plant name), and (publication date and page number of this FEDERAL REGISTER notice). A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and Gerald Garfield, Esquire, Day, Berry and Howard, One Constitution Plaza, Hartford, Connecticut 06103.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the Atomic Safety and Licensing Board designated to rule on the petition and/or request, that the petitioner has made a substantial showing of good cause for the granting of a late petition and/or request. That determination will be based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

For further details with respect to this action, see the application for amendment dated November 15, 1988, which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, N.W., Washington, D.C., and at the Waterford Public Library, 49 Rope Ferry Road, Waterford, Connecticut 06385.

Dated at Rockville, Maryland, this 18th day of January 1989.

FOR THE NUCLEAR REGULATORY COMMISSION



David H. Jaffe, Project Manager
Project Directorate I-4
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation