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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
Before the
ATOMIC SAFETY AND LICENSING BOARD
Administrative Judges:

James P. Gleason, Chairman
Thomas D. Murphy
Dr. Thomas S. Elleman

In the matter of	Docket No. 50-029-LA
YANKEE ATOMIC ELECTRIC COMPANY	ASLBP No. 98-736-01-LA
(Yankee Nuclear Power Station)	April 6, 1998

NEW ENGLAND COALITION ON NUCLEAR POLLUTION, INC., AMENDED PETITION TO INTERVENE IN LICENSE AMENDMENT PROCEEDING FOR THE YANKEE NUCLEAR POWER STATION LICENSE TERMINATION PLAN

I. INTRODUCTION.

Pursuant to the Nuclear Regulatory Commission's [NRC] notice, 63 FR 4308-4330 (January 28, 1998), this Panel's Order directing the filing of amended petitions within seven days (March 25, 1998), and this Panel's granting a motion for enlargement of filing deadlines to include April 6, 1998 (April 1, 1998), petitioner New England Coalition on Nuclear Pollution, Inc., [NECNP] hereby submits the following amended petition to intervene in pending procceding on Yankee Atomic Electric Company's [YAEC] application to approve as an amendment to its 10 CFR Part 50 license the License Termination Plan [LTP] for the Yankee Nuclear Power Station, Rowe, Massachusetts [Yankee Rowe].

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II. FACTUAL BACKGROUND.

A. On May 15, 1997, YAEC filed with the NRC an initial version of the LTP for Yankee Rowe.

B. In August, 1997, the NRC publicly acknowledged receiving the LTP. 62 FR 43559 (August 14, 1997).

C. On September 9, 1997, the NRC requested that YAEC supplement the LTP by responding to NRC Staff questions and comments. This request does not appear in the public docket, but is referenced in YAEC's response.

D. On November 5, 1997 and November 24, 1997, the NRC Staff conducted a teleconference with YAEC concerning comments and questions about the Yankee Rowe LTP. No transcript of these communications appears in the Public Docket, but the telcons are referenced in YAEC's transmittal of Revision 1 of the LTP.

E. On December 18, 1997, D.K. Davis, YAEC, provided responses to questions and comments of the NRC staff in response to the LTP.

F. On December 31, 1997, YAEC filed Revision 1 to the LTP.

G. At the beginning of January, 1998, the NRC published a notice of public meeting scheduled for January 13, 1998, in Buckland, Massachusetts, to present the LTP for public comment. 63 FR 275 (January 5, 1998)

H. On January 13, 1998, the NRC conducted a public meeting in Buckland, Massachusetts. At that time, the last word the NRC gave the public about the availability of a hearing on the LTP was contained in the following exchange during the meeting:

> MR. FAIRTILE: This gentleman here had his hand up first.
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> MR. LOVEJOY: My name is Sam Lovejoy. I thought when you first made your presentation - - maybe you just spoke too fast or I was hearing too slowly - - you said you were going to be advertising in the National Register.
>
> MR. FAIRTILE: Federal Register, yes. Yes. We'll put in--
>
> MR. LOVEJOY: Is this because you're trying to decide whether to hold a Subpart G hearing or a Subpart L hearing or you're not considering either kind of hearing?
>
> MR. FAIRTILE: No. The notice has nothing to do with the type of hearing. The notice is just to give the public an opportunity to make comments or request a hearing. The type of hearing will be decided in the future, or if there will even be a hearing. You may request a hearing and there may not be a hearing granted for various reasons.
>
> You can talk to Ann about that.[1]

NRC, Transcript of Public Meeting at Buckland, Massachusetts at 52-53 (January 13, 1998) (emphasis added).

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[1] Mr. Fairtile here refers an interested member of the public for consultation with the NRC Staff's attorney, Ann Hodgdon, Esq. She represents the NRC staff's interests in this proceeding, in contradistinction to the interests of the public, licensee, or others.

I. Fifteen days later, the NRC published a notice that the NRC staff had made a proposed determination granting the license amendment making effective the Yankee Rowe LTP under No Significant Hazards Consideration. 63 FR 4308-4330 (January 28, 1998). In pertinent part, the notice provided the following directions to interested persons:

> By February 27, 1998, 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 must file a written request for a hearing and a petition for leave to intervene.

Id. at 4308.

J. Responding to this notice, which NECNP regarded as conditioning the offer of an opportunity for a public hearing upon the licensee's request for a hearing, NECNP wrote[2] to the NRC on February 24, 1998, to request such a hearing and take note of several concerns:

1. That the NRC staff failed to exercise minimum due process standards:

   a. providing only eight days notice of the public meeting;

   b. not making available to the public the version of the LTP under discussion at the meeting;

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[2] Within the same time-frame, Citizens Awareness Network, Inc., Rowe, Massachusetts, Nuclear Information and Resource Service, Washington, D.C., and the Franklin Regional Planning Board, Greenfield, Massachusetts, filed similar comments and hearing requests.

c. allowing public questioning to be cut-off even though there was time available to answer questions;

d. failing to answer the questions and comments posed at the public meeting before issuing the notice of proposed approval of the license amendment under No Significant Hazards Consideration.

e. providing an ambiguous offer of hearing which seemed to be a solicitation of comments and offer of a hearing only if the licensee requested a hearing.

2. That, in lieu of allowing the " proposed" No Significant Hazards Consideration approval of the license amendment application to go forward, the Commission should direct that a hearing be held in the vicinity of the reactor site because: (i) the licensee's reliance in the LTP upon outdated environmental data---the Generic Environmental Impact Study on Decommissioning is nearly 10 years old, many of its predictions have proven to be incorrect, the standard method for calculating transportation doses has changed, and the financial projections for the costs of decommissioning are off by an order of magnitude; (ii) the licensee's projected site release radiation above background (as high as 87 millirem/year above background) in relation to NRC and EPA limits (no more than 25 or 15 millirem above background), and (iii) the licensee's failure

to seek a 10 CFR Part 72 license for continuing on-site storage of high-level radioactive waste after removal of the fuel storage pool.

3. That, in lieu of allowing the " proposed" No Significant Hazards Consideration approval of the license amendment application to go forward, the Commission should direct that a 10 CFR Part 2, subpart G hearing on the LTP be held in the vicinity of the reactor site (Shelburne Falls or Greenfield), after the initial informational process has been redone. This would permit interested persons to attend the public meeting upon adequate notice and information. Such notice and information would include 20 to 30 days notice of the public meeting, during which entire time the relevant documents at issue would be available through the Local Public Document Room. Following such a properly noticed meeting, the staff should answer the questions and comments filed at the meeting. A reasonable time thereafter, notice should be provided of the opportunity for a hearing. Notice should be unambiguous in its offer of a hearing (unlike the notice provided for this proceeding, which notice seemed to make the provision of a hearing for interested persons contingent upon the licensee's request of a such a hearing). James L. Perkins, President, New England Coalition on Nuclear Pollution, Letter to NRC , re: NRC Notice, 63 FR 4308-4330 (January 28, 1998), " Objection to use of No Significant Hazards Consideration to approve Yankee Atomic Electric Company's License Termination Plan for the Yankee

Nuclear Power Station, Rowe, Massachusetts, and request for a 10 CFR 2, subpart G hearing on the plan," at 1-2 (February 24, 1998).

K. On March 11, 1998, the Secretary of the Commission referred the requests for a hearing to the Atomic Safety and Licensing Board.

L. On March 11, 1998, YAEC filed " Answers" to the requests for a hearing, characterizing the requests as " Requests for Hearing and Petitions to Intervene."

M. On March 16, 1998, the NRC staff filed its " Answers" the requests for a hearing, taking a position nearly indistinguishable from YAEC.

N. On March 25, 1998, in an apparent effort to eliminate confusion over the Panel's view of the hearing requests filed in this matter, the Panel issued an Order which referred to the persons requesting a hearing as " petitioners" and provided an opportunity to file amended petitions within seven (7) days (i.e., by April 1, 1998). Order of Atomic Safety and Licensing Board Panel, ASLBP No. 98-736-01-LA (March 25, 1998).

N. On March 31, 1998, the Franklin County Regional Planning Board [FCRPB] filed with the Panel a motion for enlargement of filing deadlines through Monday, April 6, 1998, with other deadline conformed thereto. The Panel granted this motion on March 31, 1998. On the same day, NECNP, joining Citizens Awareness Network, Inc.[CAN], and Nuclear Information and Resource Service

[NIRS], filed a motion for the same enlargement of time as the Panel extended to FCRPB.

O. On April 1, 1998, the Panel granted a motion for enlargement of time through April 6, 1998 for NECNP, CAN, and NIRS to file amended petitions.

III. NECNP HAS STANDING TO INTERVENE IN THIS PROCEEDING.

Section 189(a) of the Atomic Energy Act guarantees a hearing " to any person whose interests may be affected" by a proceeding for the issuance or amendment of an operating license for a nuclear facility." 42 U.S.C. § 2239(a). Intervention as of right under Section 189(a) has been said to be governed by " contemporaneous judicial concepts of standing" which have been interpreted to require a petitioner to demonstrate that: "(1) it has suffered or will suffer a distinct and palpable injury that constitutes injury in fact within the zone of interests arguably protected by the governing statute [such as the Atomic Energy Act [AEA] or National Environmental Policy Act[NEPA]]; (2) the injury is fairly traceable to the challenged action; and (3) the injury is likely to be redressed by a favorable decision." *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), LBP-96-2, 43 NRC 61, 68-70 (1996) . As NECNP demonstrates below, under the NRC's prevailing interpretation of the application of the requirements of Section 189(a), NECNP has standing to intervene in this proceeding

A. NECNP Has Standing To Intervene On Behalf Of Members.

" [W]hen...an organization...seeks to intervene on behalf of its members...that entity must show it has an individual member who can fulfill all the necessary elements and who has authorized the organization to represent his or her interests." *Id.* at 68; *see also General Public Utilities Nuclear Corporation* (Oyster Creek Nuclear Generating Station), LBP-96-23, 44 N.R.C. 143 (1996); *Vermont Yankee Nuclear Power Station* (Vermont Yankee Nuclear Power Station), LBP-90-6, 31 NRC 85, 89 (1990), *citing Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 613-14 (1976); *Metropolitan Edison Co.* (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 332 (1983); *id.*, CLI-85-2, 21 NRC 282, 316 (1985); *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), CLI-92-2, 35 NRC 47, 56 (1992). Under this standard, NECNP is entitled to intervene in this proceeding on behalf of members who would be injured by an inadequate LTP or unsafe activities conducted during the process of implementing the LTP. *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), LBP-96-21, 43 NRC 61, 68-70 (1996). Through the attached declaration of one of its members, Jean Claude van Itallie, NECNP seeks to demonstrate its entitlement to standing in this proceeding.[3]

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[3] *See generally*, Declaration of Jean-Claude van Itallie, Exhibit 'A', attached hereto.

Mr. van Itallie has authorized NECNP to represent his interests in this proceeding.[4] Because Mr. van Itallie has authorized NECNP to represent his interests in this proceeding, NECNP has provided an adequate basis upon which this Panel may recognize its organizational standing to represent Mr. van Itallie's interests in this proceeding. Moreover, as Mr. van Itallie declares, NECNP would be pursuing as possible outcomes to this proceeding, in the interest of protecting the environment and public from radiation-induced injuries, a denial or modification of the pending license amendment to assure such protections, which modification or denial are in the interest of Mr. van Itallie and NECNP.[5] Because the NRC staff have already found the license amendment benign, and the licensee wants it approved as submitted, only NECNP can adequately represent Mr. van Itallie's interests in this proceeding.

B. NECNP Will Suffer Injury-In-Fact as A Result of the Proposed Licensing Amendment, Which Injury May Be Eliminated or Mitigated By NECNP's Participation in the Proceeding.

NECNP has standing to intervene on behalf of members who would suffer injury-in-fact from implementation of the proposed Yankee Rowe LTP, which plan does not adequately protect NECNP members' health and safety or the health

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[4] *Id.* at 1, ¶3.

[5] *See generally id.*

of the environment.[6] NECNP is a nonprofit educational association incorporated under the laws of the State of Vermont. NECNP's members live throughout New England, and at least one member, Mr. van Itallie, who authorized NECNP to represent him in the proceeding, lives in close proximity to the Yankee Rowe site.

NECNP's mission is informing and educating the public concerning the hazards of nuclear power and the availability and benefits of safer and more efficient energy sources. Since its inception in 1971, NECNP has actively participated in many NRC rulemaking, licensing, and enforcement proceedings on the health and safety of nuclear power facilities in New England, including Yankee Rowe.

The declaration of Jean-Claude van Itallie, an NECNP member who has authorized the organization to represent him in this proceeding, discusses concerns that his health and safety, the quality of his environment and ability to appreciate it, and the value of his property would be adversely affected by an unsafe or inadequate LTP for Yankee Rowe.[7] Mr. van Itallie lives within six miles of the Yankee Rowe site boundary. He may be precluded from continuing such activities indefinitely if the LTP is inadequate and the license terminated with restricted

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[6] *See below*, NECNP's identification of specific aspects of the subject matter of the proceeding as to which it wishes to intervene, for an outline of LTP inadequacies.

[7] *See generally*, Declaration of Jean-Claude van Itallie (NECNP member) (March 26, 1998), Exhibit 'A' attached hereto.

public access to a radioactively contaminated site, or in the event, during implementation of the LTP, of an accident involving the irradiated fuel stored at the Yankee Rowe site.

Mr. van Itallie would like to freely enjoy the recreational pleasures of his own property and the aesthetic pleasures of the natural surroundings, but cannot do so because of the continuing threat posed by the presence of irradiated fuel on site and the vagaries of the LTP on how this fuel will be maintained, handled, secured, and stored.[8] As a property owner whose property is within six miles of the Yankee Rowe site, Mr. van Itallie is also concerned about any adverse economic impact upon the value of his property. Were any one of a number of credible accidents to occur at the Yankee Rowe site during the process of implementing the LTP, the value of Mr. van Itallie's property would fall. Moreover, if the Yankee Rowe LTP is inadequate to fully remediate the site, the value of Mr. van Itallie's property will also fall. Likewise, given his proximity to the Yankee Rowe site, Mr. van Itallie would suffer adverse consequences due to the release of radiation from the site during and of the kinds of accidents Mr. Lochbaum describes.[9] Such releases of radiation would also interfere with Mr. van Itallie's ability to freely enjoy the natural beauty of the local environment. It

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[8] *Id.*

[9] *See generally* Declaration of David Lochbaum (March 27, 1998), Exhibit 'B' attached hereto.

is also extremely likely that any adverse consequences Mr. van Itallie may suffer--environmental, economic, and health--would be long-term problems due to the commonly acknowledged properties of the radioactive materials involved. The threat posed to Mr. van Itallie, which forms the basis of his concerns, is not merely speculative, and is supported by the declaration of David Lochbaum, nuclear safety engineer for the Union of Concerned Scientists.[10]

Mr. Lochbaum has provided a preliminary safety review of the site conditions prevailing under the Yankee Rowe LTP. In conducting this review, Mr. Lochbaum examined the updated Final Safety Analysis Report (FSAR) for Yankee Rowe, the LTP, applicable federal regulations contained in Title 10 of the Code of Federal Regulations, NRC Information Notice No 84-73: " Gaps in Neutron-Absorbing Material in High-Density Spent Fuel Storage Racks," NRC Information Notice No. 93-70: " Degradation of Boraflex Neutron Absorber Coupons," and NRC Bulletin 94-01: " Potential Fuel Pool Draindown Caused By Inadequate Maintenance Practices At Dresden Unit 1."[11] Mr. Lochbaum concludes that, " there are significant safety concerns...for persons working at Yankee Nuclear Power Station and/or living within close proximity...." and " these significant safety concerns have not been addressed in the Yankee Nuclear Power

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[10] *See generally,* Declaration of David Lochbaum (March 27, 1998), Exhibit 'B' attached hereto.

[11] *Id.* at ¶ 6.

Station [LTP]."[12] These concerns may be summarized as: (1) lack of control to adequately preclude damage to fuel storage racks and/or irradiated fuel contained therein, such that criticality margins may be compromised; (2) lack of adequate description of methods and safety considerations involved in moving irradiated fuel allowing for the potential for a 35 ton cask drop into the fuel pool; (3) LTP and FSAR lack definition of instrumentation and controls necessary to detect potential problems in the spent fuel pit leading to unobserved degraded conditions in the spent fuel pit, leading to potentially serious accidents due to water level drop or degradation of irradiated fuel cladding.[13] These concerns lead Mr. Lochbaum to conclude that the risks to persons on site and living near the facility are " real, not highly speculative, and should be taken very seriously."[14] Mr. van Itallie is a person living in close proximity to the risks Mr. Lochbaum describes. Mr. van Itallie qualifies as a person who is under threat of real, non-speculative harm. This harm may be eliminated or mitigated if this Board allows NECNP to represent Mr. van Itallie's concerns, and attempt to have the LTP modified to safeguard against the accidents Mr. Lochbaum describes.

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[12] *Id.* at 2-3.
[13] *Id.* at 3-5, ¶ 8.
[14] *Id.* at 5, ¶ 9.

C. NECNP's Concerns Fall Within the Zone of Interest Protected by the Atomic Energy Act and the National Environmental Policy Act.

NECNP's concerns---as stated in declaration of member Jean-Claude van Itallie, and as set forth below in the identification of specific aspects of the subject matter of the proceeding as to which NECNP wishes to intervene---relate to health and safety, and to the condition of the human and natural environment. These concerns therefore fall within the " zones of interest" which Congress chose to protect through enactment of the Atomic Energy Act and National Environmental Policy Act.

NECNP's interest, through its representative member, will be affected by the outcome of this proceeding because the Panel may choose, based upon NECNP's active participation in the proceeding, to modify or reject the LTP license application based upon health and safety considerations NECNP raises. Potential damage to Mr. van Itallie's health, property value, and his ability to enjoy the local environment, would be "occasioned by the impact that the [agency action] would or might have upon the environment." *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), CLI-92-2, 35 NRC 47, 57 (1992) (*quoting Tennessee Valley Authority* (Watts Bar Nuclear Plant, Units 1 and 2), ALAB-413, 5 NRC 1418, 1421 (1977), *quoting Long Island Lighting Co.* (Jamesport Nuclear Power Station, Units 1 and 2), ALAB-292, 2 NRC 631, 640

(1975)). Damage of this kind to the environment. with consequent damage to the value of Mr. van Itallie's property, is the kind of harm that NEPA was designed to avoid, hence within its "zone of interests". *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), CLI-92-2, 35 NRC 47, 56-57 (1992) (*citing as examples Jersey Central Power and Light Co.* (Forked River Nuclear Generating Station, Unit 1), ALAB-139, 6 AEC 535 (1973); *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-223, 8 AEC 241 (1974)). Moreover, the Atomic Energy Act protects similar interests, as it gives the NRC authority to protect the public from radiological injuries to property as well as health interests. Atomic Energy Act, §§ 103b, 161b, 42 U.S.C. §§ 2133(b), 2201(b); *Gulf States Utilities Company, et al.* (River Bend Station, Unit 1), CLI-94-10, 40 NRC 43, 48 (1994). Mr. van Itallie's (hence NECNP's) interests in protecting his health and safety, the local environment, and his porperty from harm due to the accidental release of radiation from the Yankee Rowe site under to LTP or following it, are, thus, within the "zone of interests" protected by the Atomic Energy Act.

D. NECNP Has Standing To Appear As A Full Party In This Matter.

NECNP has provided an adequate declaration to support standing of its member representative member, Jean-Claude van Itallie. Mr. van Itallie has duly authorized NECNP or its designated agent to represent his interests. The interests

he describes form the basis for standing under the NRC's jurisprudence and that of a potential reviewing Court. Moreover, the harms described by Mr. van Itallie are supported by the declaration of an expert in nuclear safety issues, Mr. Lochbaum of Union of Concerned Scientists. Finally, it is plain from Mr. van Itallie's declaration that there are a number of outcomes to this proceeding which would mitigate or eliminate the harms he now suffers. Hence, NECNP should be admitted to this proceeding to represent Mr. van Itallie's interests, that of the general membership, and in advancement of its corporate purposes.

III. Aspects of Proceeding On Which NECNP Seeks to Intervene.

NRC regulations at 10 CFR 2.714(a)(2) require a petitioner to set forth " the specific aspect or aspects of the subject matter of the proceeding as to which petitioner wishes to intervene." *Arizona Public Service Company, et al.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), LBP-91-4, 33 NRC 153, 159 (1991). NECNP takes the position that the application for a license amendment, the LTP, all aspects of the LTP, the extent of compliance the the application and LTP with NRC regulations, and the extent of application and LTP compliance with the Atomic Energy Act, National Environmental Policy Act, Nuclear Waste Policy Act, and other relevant statutes, reasonably comprise the subject matter of the instant proceeding as noticed in the Federal Register. In this context, NECNP offers the following in satisfaction of 10 CFR 2.714(a)(2):

A. Outline Aspects of LTP Hearing in NECNP Would Intervene.

1. Site characterization methodology/implementation in LTP:

a. Validity of procedures utilized to characterize the site:

i. Nature, sufficiency, adequacy of methodologies used;

ii. Choice of Methodologies:

(1) Reasonableness of choice;

(2) Scientific basis for choice;

(3) ALARA suitability of choice;

(4) Limitation of chosen methodology;

(5) Cost benefit analysis of chosen methodology.

b. Nature and sufficiency of items included in the survey:

i. Completeness;

ii. Adequacy of description;

iii. Adequacy of assay of contamination;

iv. Adequacy of assay of activation analysis.

c. Nature and sufficiency of environmental surveys:

i. Adequacy and sufficiency of determination of background radiation levels;

ii. Adequacy and sufficiency of soil and asphalt surveys;

iii. Adequacy and sufficiency of soil sampling and Gamma logging in open land areas;

iv. Adequacy and sufficiency of subfloor soil sampling;

v. Adequacy and sufficiency of groundwater sampling;

vi. Adequacy and sufficiency of surveys of Deerfield River and Sherman Pond sediment;

vii. Adequacy and sufficiency of surveys of leach fields;

viii. Adequacy and sufficiency of surveys of fill areas;

ix. Adequacy and sufficiency of surveys of garbage and other waste disposal practices during operational life of reactor, and how such have been treated or ignored in the LTP.

d. Adequacy and sufficiency of supporting documentation and references for site characterization history, activities, procedures, choice of methodologies.

2. **Adequacy of Evaluation, Description and Discussion of Issues Involved in Dealing with Remaining Dismantlement (i.e. Decommissioning) Activities:**

a. Adequacy, assumptions, sufficiency of description of systems, structures, components not required for spent fuel storage;

i Reasonableness of same;

ii. Cost/benefits involved;

b. ALARA considerations (adequacy, assumptions);

c. Considerations of non-radioactive hazardous materials;

3. Adequacy, assumptions, sufficiency of description of systems, structures, components associated with storage of irradiated fuel in the irradiated fuel pool:

a. Reasonableness of same;

b. Cost/benefits involved;

i. Fuel storage options;

ii. Long term planning;

iii. ALARA considerations (adequacy, assumptions);

iv. Nature of licenses used:

(1) Timing of license (Pt. 50 or Pt. 72);

(2) Requirements of license (Pt. 50 or 72);

c. Nature, adequacy, sufficiency, of planning for final license termination;

d. Nature, adequacy, sufficiency of references used to support licensee's choices concerning remaining dismantlement issues/activities.

4. Adequacy of Site Remediation Aspects of LTP:

a. Adequacy, sufficiency, nature of licensee's approach;

b. Adequacy, sufficiency, cost/benefit analysis, ALARA considerations nature of methodologies for remediation of:

i. Building and structure surfaces;

ii. Surface soils and asphalt;

iii. Sediment;

iv. Subfloor soils;

v. Groundwater;

vi. Underground water/aquifer;

vii. Fuel pit, pool;

viii. Ion exchange pit;

ix. Any other RCAs or release pathways.

c. Adequacy, sufficiency of ALARA analysis for site remediation;

d. Adequacy, sufficiency of supporting references for site remediation.

5. Adequacy of Characterization of End Use of the Site:

a. Adequacy, sufficiency, nature of discussion in plan;

b. Adequacy, sufficiency, nature of references used to support end use characterization.

6. Adequacy of Estimate of Remaining Decommissioning Costs and Assurances of Funding:

a. Adequacy, sufficiency, nature of licensee's presentation; reasonableness of assumptions;

b. Adequacy sufficiency, nature of licensee's remaining cost estimate; reasonableness of assumptions;

c. Adequacy, sufficiency, nature of licensee's discussion of decommissioning funding; reasonableness of assumptions;

d. Adequacy, sufficiency, nature of references used to support licensee's discussion of decommissioning funding issues.

7. Assay of Environmental changes Associated With License Termination Activities:

a. Adequacy, sufficiency, nature of licensee's discussion of these issues;

b. Adequacy, sufficiency, nature of references used to support licensee's discussion of these issues.

8. Final Status Survey Plan:

a. Adequacy, sufficiency, nature of licensee's formulations, assumptions, and methodology for final status survey plan;

b. Adequacy, sufficiency, nature of ALARA consideration in final status survey plan;

c. Adequacy, sufficiency, nature of cost/benefit assumptions in final status survey plan;

d. Adequacy and sufficiency of references used to support final status survey plan.

NECNP also intends to focus upon examination of the approach YAEC has adopted in relation to demonstrating compliance with 10 CFR Part 20, subpart E; Part 50, § 50.82(a)(9), raising, in this context, the plan's adequacy, sufficiency, assumptions, cost/benefit analyses, ALARA compliance, and compliance with NEPA , the AEA, and other relevant laws; and the adequacy of the LTP as a supplement to the FSAR/decommissioning plan.

The following[15] is by way of further elucidation of aspects of the proceeding in which NECNP would intervene. It is not intended in any way to limit the aspects set forth above:

B. Descriptive Aspects of the Proceeding on the LTP in Which NECNP Intends to Intervene:

1. General deficiencies in the LTP.

a. The Yankee Rowe License Termination Plan (LTP) is premature and incomplete. Vague and conditional language, broad generalities and murky projections render much of the plan impervious to technical or practical assessment. If the LTP meets the NRC standards of license amendment application, then they are very poor standards indeed. In the words of renown physicist, Wolfgang Pauli, " That paper [read, LTP license amendment application] isn't even good enough to be wrong." The application does not live up to its title in that the " plan" does not extend to license (Part 50) termination.

2. Inadequacies in LTP Dealing With High Level Waste Remaining on Site.

b. The most obvious area of concern is the disposition of the high level waste nuclear fuel, yet the " termination" plan does not address its

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[15] A representative of the Board of Trustees of petitioner NECNP provided the material comprising section III. B.

disposition through to the end of license. Will it remain in the spent fuel pit? Will it be removed to dry cask storage? The end of license (part 50) date is unspecified. YAEC and NRC staff are unwilling to discuss dry cask storage practicalities as part of this proceeding. Reasonable and conservative thinking persons would have to assess the LTP assuming permanent disposal of high level nuclear fuel waste in the nuclear fuel waste pit. Yet the nuclear fuel waste pit clearly doesn't meet Department of Energy standards (as set by Congress) for permanent disposal.

c. In the presence of NRC staff, YAEC has represented to the public that it intends to use dry cask storage (before license termination; indeed, under part 50). NRC staff did not demur, thereby signaling approval. Traditionally, silence betokens consent. In fact, in response to a telephone inquiry, Morton Fairtile, NRC Project Manager for Yankee Rowe, quite emphatically told NECNP staff that YAEC had decided to move the waste nuclear fuel to dry cask storage and that YAEC had even chosen the cask model to use. If NRC's and YAEC's representations are truthful and correct. then NECNP begs to be enlightened as to what provisions of NRC regulations permit the exclusion of major actions relevant to, and within the purported time-frame, of the proposed license amendment? Ethics may not play a determinant part in this proceeding, but YAEC's and NRC's representations have certainly had an effect upon who might have chosen to attempt to intervene in this proceeding. Therefore, NECNP

believes that it would be appropriate for the Panel to consider the truthfulness of NRC's and YAEC's representations to the public regarding the licensing process as part of the record in this proceeding.

d. The LTP license amendment application is improperly formulated in that the activities described extend beyond construction, operation, disassembly, and cleanup of a nuclear power station to the retrofitting of nuclear power station components for the purpose of establishing an independent interim high level nuclear fuel waste storage facility.

e. The NRC states its belief, in 10 CFR 51.23, that there is reasonable assurance that a geologic repository will be established within the first quarter of the twenty-first century. There is, however, little reasonable assurance that fuel assembly materials and components, or fuel waste racks and neutron shields, will retain their integrity in wet storage for that period of time. It is therefore imperative that YAEC be required to state with specificity and detail how it plans to move degraded fuel assemblies into casks and to a dry cask storage site, if that is the plan. Moreover, if YAEC plans to remove fuel waste to a separate dry cask storage site outside the present radiation control area (from the reactor site), then it should be required, under the provisions of 10 CFR 72.218, to state with specificity and detail how it intends to do so.

f. In the LTP at page 1.5, YAEC lists 21 canisters of greater than class C waste and a small amount of " reconfigured" fuel among the contents of the nuclear fuel waste pit. The nature of the " reconfiguration" is not detailed, nor is the class C waste characterized as to radio-inventory or medium. Thus, questions remain open as to the disposition and effect of these materials, as well as the manner in which they will be handled through future planned activities.

g. YAEC asserts in the LTP, at page 1-6 and figure 1.1, that the last nuclear fuel waste cask will be off-site by the year 2018. Contrary to YAEC's assertions, there is no factual basis on which to rest this assumption. Schedule uncertainties must be considered in evaluating financing, design, security, and durability of stored nuclear fuel waste components as well as canister components (gas seals, monitoring devices, etc.).

3. Inadequacies in LTP Dealing With Environmental Issues, NEPA Compliance.

a. Actions proposed under the LTP will have potential adverse impact on the environment. Removal of building floors and/or foundations, footings, drains, and backfill will expose radioactively contaminated subsoil and foundation support materials (e.g. gravel) to the weather. This will enable water-borne transport of radioactive contaminants deeper into the soil, into sub-surface water (ground water), into surface run-off water, and offsite to local waters and water supplies. Excavations carried out in dry weather have the

potential to raise clouds of radioactive dust, which, in turn, may be borne offsite by wind. Radioactive dust spread to non-control areas may also be carried offsite by other mechanisms including vehicle tires and worker's clothing. Workers in non-control areas may also ingest it. In this regard, it is quite significant that, in viewing the LTP, it appears neither the NRC nor YAEC have laid out considerations of any significant environmental issues for public inspections or review. It is therefore difficult (if not impossible) to ascertain whether the NRC has complied with NEPA. Merely allowing YAEC (or any licensee) to say that they will meet NEPA requirements does not even meet the threshold of environmental consideration in which NEPA requires the NRC to engage. Such considerations are supposed to take place prior to approval and implementation of a project on the scale and long-term environmental impact associated with cleaning up a radioactively contaminated site.

b. To satisfy broad environmental concerns, the LTP relies on environmental site work done at the time of construction (over 30 years ago) and the NRC's out-of-date *Generic Environmental Impact Statement for the Decommissioning of Light Water Reactors.* Dependence on early site work ignores the cumulative and individual environmental impact of additional construction, paving, soil compaction, erosion, terra-forming, road-building, clearing, and tree-cutting which have taken place on-site and on adjacent land

since the plant was built. All and any of these may effect ground water absorption, run-off, earth stability, and additional erosion. Demolition of site structures can be expected to add to soil destabilization. Any subsoil radio-contaminants would be likely to then be exposed. These effects are aggravated by the steeply sloping nature of the site.

Neither reference takes into consideration the possible onsite or near-presence of endangered species.

Neither reference takes into consideration changing weather patterns, which have been recently characterized by extremes of rainfall, ice, and wind. Such consideration would seem to require pre-planning to prevent erosion of backfill supporting nuclear fuel waste pit walls thus increasing potential for structural failure. Careful planning should be done to prevent blockage of drains and flooding or other damage (including wind damage) to the nuclear fuel waste building and nuclear fuel waste pit as they are isolated and newly exposed without the sheltering effect of surrounding buildings.

4. YAEC's Trustworthiness to Conduct Accurate Analyses is in Question.

a. YAEC proposes in LTP §§ 3.2, 3.3, and 4.2.4, to analyze the radioactive inventory of surface contamination by extrapolation from gross gamma scan prior to demolition of structures and release of debris for off-

site uncontrolled disposal. This process ignores the absorptive potential of some forms of concrete and other building materials. It ignores absorption into cracks, crevices, and penetrations and the resultant radiation shielding effect on gamma rays and particle radiation.

This extrapolation method of assay is based on assumptions of proportional inventory, which do not always hold true. The disposal of the Yankee Rowe reactor pressure vessel head (RPVH) is a case on point:

> Following onsite decontamination and radiation survey, YAEC shipped the RPVH to a licensed decontamination facility for processing and release to metal recycling. At that facility, technicians conducted an analytic survey. The survey revealed that of .7 (7/10) curies of radioactive material contaminating the surface (surface matrix) of the RPVH, three percent (3%) was Plutonium 241. No one at the facility expected to find this proportion of Plutonium, so the laboratory analysis was repeated. The second analysis yielded the same results.

What should now be in question is whether YAEC adequately characterized the reactor pressure vessel surface (surface matrix) contamination and the decontamination generated wastes now buried in Barnwell, South Carolina. Are they also three percent (3%) Plutonium 241? How would this level of Plutonium

contamination have effected worker exposures? Clearly, had YAEC performed a proper radioactive contamination assay, there would have been no surprise findings at the recycling facility. No surprises in material slated for release should be tolerated. Therefore, before any contaminated structures are demolished and released for offsite disposal, material sampling and physical analytic procedures should be required on every surface from which all detectable traces of radio-contaminants cannot be removed.

b. The LTP places some reliance on the application of sophisticated analytic tools, including relatively new computer codes, to quantify reliability, materials durability, probabilities, nuclear waste fuel stability, environmental transport mechanisms, and radio-contamination (see above). In the case of this application all assumptions, calculations, applications, methodologies, and conclusions should not be accepted until independently verified by agents or agencies whose credibility is not tainted as is the case with YAEC and Duke Engineering (incorporating the former Yankee Atomic Engineering Services). By a " Demand For Information" letter, NRC requires Yankee Atomic Engineering Services (a.k.a. Duke Engineering) to show why, given the botching of emergency core cooling system computer code analysis for Maine Yankee Atomic Power Station, these companies should ever again be permitted to do safety related analysis at any nuclear power facility. No matter how this situation may

eventually be resolved, prudence, caution, and a bias toward public safety would suggest that analysis by these entities not be accepted at face value.

5. Hazards Unanalyzed in the LTP.

a. Isolating the nuclear fuel waste building and nuclear fuel waste pit will introduce new unanalyzed hazards and/or aggravate existing hazards in ways not previously analyzed. For example, fuel oil trucks approaching the nuclear fuel waste building should be prevented by insurmountable physical barriers from approaching on the uphill side of the installation. At the terminus of a steep entry road, without surrounding structures, the Yankee Rowe nuclear fuel waste building presents a vulnerable target for a heavy truck speeding out of control. A speeding truck would present the four-fold hazard of a heavy missile capable of crushing building walls and multiple fuel assemblies, knocking over the spent fuel crane, wrecking pumps and emergency equipment, displacing water, and providing both a large fuel supply and an ignition source.

b. Nuclear fuel waste building vulnerability to wind and wind-driven missiles should be re-examined in the light of record winds experienced in a series of tornadoes, which struck central Florida during February 1998, and other sections of the eastern united States during early March. In one instance, as reported in the *Tampa Tribune*, a tractor trailer truck was tumbled over 100 yards. In another, a full-sized pick-up truck appears to have been dropped through the

roof of a townhouse. NOAA assigned the cause of the wind and storm phenomena to Pacific Ocean thermal currents and could not venture long-term forecasts.

c. Issues, which may be leading NRC staff to use acceptance criteria and take positions more stringent than those previously accepted in the Yankee Rowe license basis with regard to nuclear fuel waste storage, should be resolved before approving the LTP. A February 17, 1998, letter from Maine Yankee Atomic Power Company, discloses that NRC staff may be attempting to apply criteria from NUREG-1353, " Regulatory Analysis for Resolution of Generic Issue 82, Beyond Design Basis Accidents in Spent Fuel Pools." " Generic Issue 82" is commonly referred to as the " Zircaloy cladding fire scenario." If there are some new safety related considerations being weighed by NRC staff in this matter, such considerations should be brought forward as part of the license amendment and evaluation process in this proceeding, not held until the issues may become moot. Similarly, it has been disclosed that the staff is pursuing questions of the durability of neutron absorbing materials deployed in dense-pack nuclear fuel waste storage. If there are safety-related issues regarding the use of Boral and other materials in waste racks, they should also be openly examined in the context of the proposed application.

6. Inadequate Evaluation of Likely Accidents in LTP.

a. Cask drop, as generally described, may not be the limiting accident scenario for drop accidents in nuclear fuel waste pit storage and handling. Typically, cask drop scenarios are concerned with drop damage to the pit liner from a drop into the cask lay down area with little collateral damage to adjacent waste racks. An equally likely scenario would involve a cask drop, which strikes the rim of the fuel waste pit and tumbles into the fuel waste potentially involving damage to hundreds of assemblies. If the cask is not completely disengaged from the fuel-handling crane and sufficient lateral momentum is built in deflection from the pit rim, then the crane could conceivably be tipped over into the fuel waste as well. A cask drop on the pits edge would apply extraordinary shear stress to the pit liner and could result in pit wall and liner failure. NRC staff should consider this scenario before committing to approving a situation in which casks must eventually be used.

7. ALARA Compliance: LTP Does Not Demonstrate Residual Radiation ALARA.

a. The LTP does not demonstrate that exposure to residual levels of radiation will be kept As Low As Reasonably Achievable, that is, in accord with ALARA. For example, effective and inexpensively achievable methods for reduction of nuclide transport in disturbed sub-structure soils such as the application of soil binding agents are not clearly described in the LTP.

b. The LTP should include maximum radiation doses over background that any single member of the public could receive in a worst case scenario. YAEC's Table 3.1 in the LTP, " Surface Contamination Limits in the Final Status Survey Plan –Revision-1," page A-16, lists maximum limits for Fe-55 and Ni-63 at 600,000 dpm/100 cm/sq. If the building material with this contamination were to be recycled into domestic use with continuous exposure to a single individual, that individual would be receiving doses many orders of magnitude above background. While, as YAEC asserts, this may be acceptable to regulatory agencies and fall within guidelines, it is not made clear to the public at a time when public approval for projects resulting in this level of potential exposure is being sought. If the NRC's and YAEC's invitation to the public to participate in the planning and regulatory process is to be more than a charade, then the public should be advised of potential doses in terms they can understand.

8. LTP Does Not Adequately Define Crucial Terms.

a. No adequate definition of " License termination" in the application for license amendment (LTP).

9. Financial/Economic Aspects: Lack of Adequate Funding Assurance.

a. The LTP fails to demonstrate that there are adequate funds to complete decommissioning and release the site for unrestricted use. YAEC admits that the quantities of structure flooring, paving, sub-structure soil, and sub-paving soil, which will require remediation, are unknown. YAEC is, according to the LTP, still engaged in radiological characterization of structure surfaces. Therefore, it cannot be said what quantity of material will have to be treated as low-level waste. Due to these and other uncertainties (such as special care costs for it degraded fuel waste), there cannot be an accurate estimate of costs on which to predicate the assumption that funds are adequate.

10. Site Characterization and Final Survey Plan Inadequacies.

a. Site characterization and survey may not be complete unless extended to local public landfills to which YAEC sent large volumes of unmonitored trash over the years. Recently it has come to public attention that administrative radiological control barriers between the radioactive and " non-radioactive" sides of the site were breached at two of the other Yankee facilities, Maine Yankee Atomic and Connecticut Yankee Atomic, and radioactive materials,

presumed to be clean, had been sent offsite. It is, thus, reasonable to suspect that such control weakness are generic, and dumps used by YAEC for materials from the Yankee Rowe facility should be subjected to radiological survey.

11. Inadequacies in LTP Proposed Contamination Sampling.

a. Proposed surface contamination sampling patterns allow grossly contaminated patches and hot-spots to be overlooked. For example, at pages A-24, A-25, the LTP states, " [E]xposure rate measurements will be taken only on activated concrete, structures, or components at a frequency of at least one measurement per 4 square meters" and " Total contamination (fixed point) measurements on floors and wall below two meters as follows: for areas >1500 sq. meters, a minimum of one measurement location for each 50 sq. meters."

12. LTP Relies on Questionable Bases for Determining Background Radiation.

a. Throughout the LTP, YAEC makes reference to measuring cesium-137 with the disclaimer that cesium-137 is by and large the result of nuclear weapons-testing fallout. The fact that this measurement continues as a part of site characterization gives little confidence that area background levels (both variations and mean) have been established to provide a benchmark against which to determine residual dose over background.

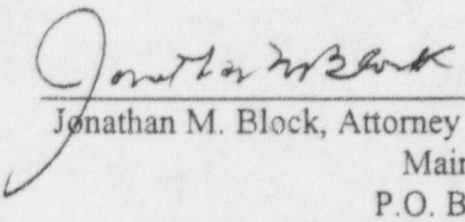
13. LTP Inadequately Addresses Possible Continuing Contamination.

a. At LTP §4.4, paragraph 1, YAEC states that soil on the North side of the spent fuel (waste) pit building was found to be in excess of site release criteria. YAEC makes no statement as to the origin of that contamination. The NRC or YAEC must determine if the spent fuel (waste) pit is still leaking, and, if so, determine if is it flawed in a way that will preclude continued service as either an interim or long term nuclear waste storage site.

b. In the Final Status Survey Plan on Page A-19, YAEC determines (by fiat?) that certain portions of the site are to be designated as " Non-Impacted Areas" and no radiological surveys need take place in such areas. Bit much, is it not, to assume that there is nothing to be learned in those areas? NECNP understands that a site survey is intended to determine if there is contamination, as well as how much, rather than developing ways to avoid such determinations.

IV. CONCLUSION

For the foregoing reasons. and upon the information provided in satisfaction of NRC regulations, NECNP should be admitted to this proceeding with full party status.



Jonathan M. Block, Attorney at Law
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Counsel for NECNP
April 6, 1998

Exhibit A

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
Before the
ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket No. 50-029-LA
	)	ASLBP No. 98-736-01-LA
YANKEE ATOMIC ELECTRIC COMPANY	)	
	)	
(Yankee Nuclear Power Station)	)	March 26, 1998

DECLARATION OF JEAN-CLAUDE VAN ITALLIE, MEMBER OF THE NEW ENGLAND COALITION ON NUCLEAR POLLUTION, INC., SUPPORTING ORGANIZATIONAL STANDING

I, Jean-Claude van Itallie, member of New England Coalition on Nuclear Pollution, declare the following to be true and correct to the best of my ability:

1. My name is Jean-Claude van Itallie. I reside at 63 Davenport Road, Rowe, Massachusetts. This property has been in my family for over fifty years. I have owned and lived here for over thirty years.

2. My home is within six miles of the Yankee Nuclear Power Station site which is at issue in this proceeding.

3. I am a member of the New England Coalition on Nuclear Pollution, Inc.[NECNP], and have authorized NECNP, or any agent it chooses, to represent me in this matter.

4. The purpose of the NECNP is educating the public to the health, safety, and economic consequences involved in the continued use of nuclear fuel to generate

electricity, and the long term health, safety, and economic consequences of the use of nuclear power rather than other means for generating electricity.

5. NECNP appeared before the Atomic Safety and Licensing Board Panel in the initial phases of the Yankee Rowe decommissioning plan approval process. At that time, the Panel found that NECNP had standing to appear.

6. My interest in the current proceeding, as a member of NECNP, stems from my concerns about the long term environmental effects of low-level radiation. The events involved in the decommissioning and site clean-up of the Yankee Nuclear Power Station are very troubling in this regard. In addition to my concerns about health and safety, I am also concerned, as a property owner, about the long term effects an ineffectual clean-up of the Yankee Rowe site, or an irradiated fuel accident, would have on the value of my property.

7. I agree with the NECNP position that the reactor site is still dangerous. Beyond whatever dangers are connected with the levels of site contamination, there is a continued threat of an irradiated fuel accident. Such an accident would likely involve the release of radiation into the local environment. Living close to the reactor site boundary, the continued potential for such releases of radiation profoundly affects my life, and is a continuing source of concern to me.

8. I walk and hike in this area, yet my knowledge of the nearby contaminated and still dangerous reactor site interferes with my enjoyment of the local scenic beauty. That the final site condition projected under the License Termination Plan indeed satisfy the NRC's criteria for general release is of continuing concern to me.

9. There is still irradiated fuel at the Yankee site which will be transferred into dry cask storage. This means that a very real potential exists for accidental releases of radiation into the local environment. As I understand the situation, such an accident can occur as a result of a number of problems. These include, but are not limited to, problems with the irradiated fuel pool, loss of cooling of the irradiated fuel, loss of water providing a protective barrier to radioactivity from the irradiated fuel, and deterioration of the structures separating the irradiated fuel rods so that a local chain-reaction could take place .

10. I believe that NECNP's participation in a hearing on the Yankee License Termination Plan will help provide a critical perspective that would lead to modifications of the plan. Such modifications could provide for lower residual levels of radiation on site at license termination. NECNP has long experience (since the early 1970s) in dealing with NRC proceedings, public meetings, hearings, and litigation. NECNP also has a wealth of technical expertise and regular contacts with many experts in areas relevant to the issues in this proceeding. This expertise NECNP will bring to bear if it is allowed to fully participate in the hearing process in this case.

11. As I understand it, the current plan calls for release of the site to public use at levels of radioactive contamination far above those permitted under the Massachusetts standard of not more than 10 millirem per year above background. If NECNP has an opportunity to participate in a hearing on the plan, NECNP will insist to the best of its ability that the plan guarantee lower levels of radiation on site, and increase the level of

safety the licensee will have to use when dealing with the irradiated fuel pool and the handling and moving of irradiated fuel.

12. I am also concerned about the nature and extent of contamination and clean-up involved in taking out the irradiated fuel pool and ion exchange pits. There needs to be discussion and consideration of the environmental impacts involved in constructing a place to put the irradiated fuel after it is taken out of the pool, as well as a thorough environmental study of any radioactive contamination of the local environment due to years of operation of the reactor, ion exchange pit, and irradiated fuel pool. I believe that NECNP will insist that this takes place, and bring its special expertise to bear on the presentation and analysis of such issues in the proceeding.

13. I also believe that there needs to be some critical discussion and investigation of possible underground contamination of the entire reactor site due to leaks from the irradiated fuel pool and other sources, as well as a really thorough investigation of the nature and extent of radioactive contamination in the Sherman Pond and Deerfield River due to the operation of the Yankee Nuclear Power Station. NECNP will also insist that, as a result of this proceeding, the NRC conducts such studies or causes them to be conducted by an independent scientific research organization.

14. I am troubled that the NRC has not taken the steps necessary to assure itself of the safety of the licensee's plans for the disposition of irradiated fuel and other highly radioactive waste, such as the reactor baffle, which are now in the irradiated fuel pool. I believe that while the licensee still has an operating license, such matters are under the NRC's regulatory authority. The license termination plan hearing must clarify such

issues. I believe that NECNP, if it is allowed to participate in the hearing process, will insist that this be done.

15. NECNP will bring my concerns and other relevant issues to an investigation by the Atomic Safety and Licensing Board Panel in this case so that the issues may be resolved. NECNP's participation in this proceeding will direct the attention of the NRC, the licensee, and the Panel to such issues. This must be done to guarantee that the site will have the lowest radioactive contamination reasonably achievable when the NRC permits license termination for Yankee. In this way my health and safety may be assured, my property values protected, and hopefully, my ability to peacefully enjoy this special place of my youth will be returned to me.

I declare under penalty of perjury that the foregoing statements are true.

Executed on March 26, 1998.

Jean-Claude van Itallie

Exhibit 'B'

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISISON
Before the
ATOMIC SAFETY AND LICENSING BOARD

In the matter of	)	**Docket No. 50-029-LA**
	)	
YANKEE ATOMIC ELECTRIC COMPANY	)	**ASLBP No. 98-736-01-LA**
	)	
(Yankee Nuclear Power Station)	)	**March 27, 1998**

DECLARATION OF DAVID A. LOCHBAUM, NUCLEAR SAFETY ENGINEER, UNION OF CONCERNED SCIENTISTS, CONCERNING TECHNICAL ISSUES AND SAFETY MATTERS INVOLVED IN THE APPROVAL OF THE YANKEE NUCLEAR POWER STATION LICENSE TERMINATION PLAN

I, David A. Lochbaum, make the following declaration:

1. My name is David A. Lochbaum. I reside in the state of Maryland.

2. I am employed by the Union of Concerned Scientists as their nuclear safety engineer. I have been so employed since October 1996. I have the following responsibilities: a) direct and coordinate UCS's nuclear power program; b) monitor developments in nuclear industry to assess and respond to impact; c) serve as technical authority and spokesperson on nuclear issues; and d) initiate legal action to correct safety problems.

3. The Union of Concerned Scientists, with offices located at 1616 P Street NW Suite 310, Washington, DC 20036, is an independent nonprofit organization dedicated to advancing responsible public policies in areas where technology plays a critical role.

4. I have worked in the field of nuclear engineering since June 1979. I am a graduate of the University of Tennessee with a bachelor of science in nuclear engineering.

5. After receiving my nuclear engineering degree, I went to work for the Georgia Power Company as a junior engineer at their Edwin I. Hatch Nuclear Power Plant. I held various positions in the commercial nuclear power industry over the next 17 years prior to joining UCS. This experience is detailed in the resume attached hereto as Exhibit A.

6. At the request of Citizens Awareness Network, Inc., and attorney Jonathan M. Block, I have examined the Yankee Nuclear Power Station License Termination Plan dated May 1997, and the revised plan dated December 1997. I have also reviewed the updated Final Safety Analysis Report (FSAR) for the Yankee Nuclear Power Station. I am familiar with these documents and have relied upon them in formulating the opinions contained in this declaration. I have also examined and am familiar with, for the purposes of preparing this declaration, the applicable federal regulations contained in Title 10 of the Code of Federal Regulations, Nuclear Regulatory Commission (NRC) Information Notice No. 87-43: "Gaps In Neutron-Absorbing Material in High-Density Spent Fuel Storage Racks," NRC Information Notice No. 93-70: "Degradation Of Boraflex Neutron Absorber Coupons, " and NRC Bulletin 94-01: "Potential Fuel Pool Draindown Caused By Inadequate Maintenance Practices At Dresden Unit 1." I have also relied upon these documents in formulating my opinions as expressed in this declaration.

7. Having examined the relevant documents as mentioned above, it is my professional opinion that there are significant safety concerns which remain for persons

working at Yankee Nuclear Power Station and/or living within close proximity to the facility. It is also my professional opinion that these significant safety concerns have not been adequately considered in the Yankee Nuclear Power Station License Termination Plan. These concerns are set forth below along with my recommendation that they form the subject matter of issues to be considered by the Atomic Safety and Licensing Board in the above captioned proceeding.

8. It is my professional opinion that the following significant safety issues remain for persons living in close proximity to the Yankee Nuclear Power Station and/or persons working there:

(a) Controls do not appear to adequately preclude damage to the fuel storage racks and/or irradiated fuel contained therein such that criticality margins may be compromised. The racks in the spent fuel pit which contain irradiated fuel assemblies are "designed to maintain proper spacing and structural integrity after being impacted by a fuel assembly dropped onto any location from a height of six inches above the top of the racks" [FSAR Section 246.1]. The license termination plan relies on statements that the "detailed work planning excludes activities that could result in a drop of a heavy load onto or into the Spent Fuel Pit" and "Technical Specification 3.2 limits movement of loads over the Spent Fuel Pit to those less than 900 lb" [FSAR 408.3]. A fuel assembly, or any other load weighing more than a fuel assembly and up to 900 pounds, dropped from a height greater than six inches above the top of the storage racks represents a condition outside the design bases for the plant with the potential for causing criticality in the spent fuel pit.

(b) Section 3.3 of the License Termination Plan refers to actions taken after the irradiated fuel is removed from the spent fuel pit. Yet, neither the plan nor the FSAR describe how irradiated fuel can or will be safely removed from the spent fuel pit. To the contrary, "Movement of fuel from the Spent Fuel Pit to either an on-site or off-site fuel storage facility is not bounded" by the fuel handling event analysis [FSR 408.1]. Technical Specification 3.2 allows a shipping cask weighing up to 35 tons to be moved over the spent fuel pit [FSAR 408.3]. The fuel handling accident analysis involves the drop of an object weighing less than 900 pounds [FSAR 408.1 and 408.3]. Completion of Section 3.3 of the License Termination Plan thus requires lifting loads weighing in excess of 900 pounds and other activities which are presently outside the design and licensing bases of the facility. These activities are likely to represent greater risk to the public and to workers than from the event analyzed in the License Termination Plan and FSAR.

(c) The License Termination Plan and the complementary FSAR do not define the instrumentation and controls needed to detect potential problems in the spent fuel pit. For example, the loss of spent fuel cooling capability analysis indicates that more than four weeks are available to respond to this postulated event [FSAR 408.2]. As reported at another permanently shut down nuclear plant, instrumentation to detect rising spent fuel water temperature and dropping spent fuel water level is critical in being able to respond to events appropriately [NRC Bulletin 94-01]. The lack of adequate administrative controls for this critical instrumentation may delay or prevent timely detection of degraded conditions in the spent fuel pit. Untimely detection of dropping water level in the spent fuel pit can have serious radiological consequences [NRC Bulletin 94-01].

Control of the water chemistry in the spent fuel pit is also important in preventing degradation of the irradiated fuel cladding, yet these controls are not specified in the License Termination Plan or FSAR.

9. Because it is my professional opinion that the above safety concerns addressed in paragraph 8 remain at the Yankee Nuclear Power Station, I am also of the professional opinion, and do so state here, that persons working at the plant and/or living in close proximity to the facility are at a risk of suffering the effects of the potential accidents described above, and the risks and potential are real, not highly speculative, and should be taken very seriously.

I declare under penalty of perjury that the foregoing is true and correct.

Executed March 27, 1998

David A. Lochbaum 03-27-98

David A. Lochbaum

Exhibit A: Resume of David A. Lochbaum

Career Summary

Eighteen years experience in commercial nuclear power plant startup testing, operations, licensing, software development, training, and design engineering with a reputation for delivering high quality results on or ahead of schedule and within budget.

Experience Summary

10/96 to date *Nuclear Safety Engineer, Union of Concerned Scientists*

Responsible for coordinating UCS's nuclear power program, for monitoring developments in the commercial nuclear industry, and for identifying trends/actions which may reduce nuclear safety margins.

11/87 to 09/96 *Senior Engineer, Enercon Services, Inc.*

Responsible for documenting the station blackout design and licensing bases at Haddam Neck Plant.

Responsible for developing the design and licensing bases training module for the Design Engineering Section at the Perry Nuclear Power Plant.

Responsible for conducting licensing bases vertical slice assessments for the spent fuel pool cooling, fuel handling building ventilation and safety injection systems at the Salem Generating Station.

Responsible for preparing the Design Initiation Report for the Alternate Decay Heat Removal System at the Perry Nuclear Power Plant.

Responsible for revising/eliminating figures from the Updated Final Safety Analysis Report for the Brunswick Nuclear Plant.

Responsible for the verifying implementation of licensing basis commitments at the Salem Generating Station.

Responsible for surveillance test revisions, developing post-installation test procedures, and confirming the adequacy of the lubrication program for balance of plant systems at the Limerick Generating Station.

Responsible for developing the primary containment isolation devices design basis document, reviewing the emergency diesel generators design basis document, resolving design document open items, and updating design basis documents for the James A. FitzPatrick Nuclear Power Plant. Responsible for providing design engineers at FitzPatrick and Indian Point 3 with training on their design basis documents and on the associated configuration management responsibilities.

Responsible for the design review of balance of plant systems and generating engineering calculations to support the Power Uprate Program for the Susquehanna Steam Electric Station.

Responsible for developing the reactor engineer training program, revising reactor engineering technical and surveillance procedures and providing power manuevering recommendations at the Hope Creek Generating Station.

Responsible for supporting the lead BWR/6 Technical Specification Improvement Program and preparing licensing submittals for the Grand Gulf Nuclear Station.

Experience Summary (continued)

03/87 to 08/87 *System Engineer, General Technical Services*

Responsible for reviewing the design of the condensate, feedwater and raw service systems for safe shutdown and restart capabilities for the Browns Ferry Nuclear Plant.

08/83 to 02/87 *Senior Engineer, Enercon Services, Inc.*

Responsible for performing startup and surveillance testing, developing core monitoring software, developing the reactor engineer training program, and supervising the reactor engineers and Shift Technical Advisors at the Grand Gulf Nuclear Station.

10/81 to 08/83 *Reactor Engineer / Shift Technical Advisor, Tennessee Valley Authority*

Responsible for performing core management functions, administering the nuclear engineer training program, maintaining ASME Section XI program for the core spray and CRD systems, and covering STA shifts at the Browns Ferry Nuclear Plant.

06/81 to 10/81 *BWR Instructor, General Electric Company*

Responsible for developing administrative procedures for the Independent Safety Engineering Group (ISEG) at the Grand Gulf Nuclear Station.

01/80 to 06/81 *Reactor Engineer / Shift Technical Advisor, Tennessee Valley Authority*

Responsible for directing refueling floor activities, performing core management functions, maintaining ASME Section XI program for the RHR system, providing power manuevering recommendations and covering STA shifts at the Browns Ferry Nuclear Plant.

06/79 to 12/79 *Junior Engineer, Georgia Power Company*

Responsible for completing pre-operational testing of the radwaste solidification systems and developing design change packages for modifications to the liquid radwaste systems at the Edwin I. Hatch Nuclear Plant.

Education

June 1979 Bachelor of Science in Nuclear Engineering, The University of Tennessee at Knoxville

May 1980 Certification, Interim Shift Technical Advisor, TVA Browns Ferry Nuclear Plant

April 1982 Certification, Shift Technical Advisor, TVA Browns Ferry Nuclear Plant

Professional Affiliations

Member, American Nuclear Society (since 1978).

Publications

Nuclear Waste Disposal Crisis, PennWell Books, Tulsa, OK, 1996.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the
ATOMIC SAFETY AND LICENSING BOARD

In the matter of	)	ASLBP No. 98-736-01-LA
	)	
YANKEE ATOMIC ELECTRIC COMPANY	)	Docket No. 50-029-LA
	)	
(Yankee Nuclear Power Station)	)	April 6, 1998

NOTICE OF APPEARANCE

Notice is hereby given that the undersigned attorney enters an appearance for New England Coalition on Nuclear Pollution, Inc., in the above captioned proceeding

The following information is provided pursuant to 10 C.F.R. § 2.713(b):

Name and Address:	Jonathan M. Block Attorney at Law Main Street P.O. Box 566 Putney, VT 05346-0566
Telephone Number:	802-387-2646
Admissions:	United States Supreme Court
Name of Party:	New England Coalition on Nuclear Pollution, Inc. P.O. Box 545 Brattleboro, VT 05302-0545

Respectfully submitted,

Jonathan M. Block

Jonathan M. Block,
Counsel for New England Coalition on Nuclear Pollution

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
Before the
ATOMIC SAFETY AND LICENSING BOARD

In the matter of	)	ASLBP No. 98-736-02-LA
	)	
YANKEE ATOMIC ELECTRIC COMPANY	)	Docket No. 50-029-LA
	)	
(Yankee Nuclear Power Station)	)	

CERTIFICATE OF SERVICE

I, Jonathan M. Block, counsel for New Engfland Coalition on Nuclear Pollution, hereby certify that copies of the within documents have, on this 6th day of April, 1998, been served pursuant to 10 C.F.R. 2.701 upon the following persons:

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