December 1, 2005

Mr. Dave Howland
Massachusetts Department
of Environmental Protection
Western Regional Office
436 Dwight Street
Springfield, MA 01103

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT RELATED TO AN APPROVAL OF PROPOSED DISPOSAL PROCEDURES IN ACCORDANCE WITH 10 CFR 20.2002 FOR THE YANKEE NUCLEAR POWER STATION

Dear Mr. Howland:

The U.S. Nuclear Regulatory Commission (NRC) staff is considering a request dated June 6, 2005, as supplemented by letter dated October 31, 2005, by the Yankee Atomic Electric Company to approve the continued use of concrete blocks containing tritium as a retaining wall at an off-site location in Vermont. The request for approval is submitted pursuant to Section 20.2002 of Title 10 of the Code of Federal Regulations, "Method of Obtaining Approval of Proposed Disposal Procedures." The licensee's proposed disposal is to demonstrate the material is exempt from Atomic Energy Act and NRC licensing requirements and acceptable for continued use as a retaining wall at an off-site location.

In conjunction with our review of the request, the NRC staff has prepared the enclosed draft Environmental Assessment. We are providing the draft to you for your review and comment. A copy has also been provided to Michael Whalen, with the Massachusetts Department of Public Health, Ms. Carla A. White, with the Vermont Department of Health, and the owner of the property where the material is to remain. Please forward any comments you have to me by letter within 30 days from the date of this letter. Please contact me if you have questions at (301) 415-3017 or by e-mail at jbh@nrc.gov.

Sincerely,

/RA/

John B. Hickman, Project Manager
Decommissioning Directorate
Division of Waste Management
and Environmental Protection
Office of Nuclear Material Safety
and Safeguards

Docket No. 50-029

Enclosure: Draft EA

December 1, 2005

Mr. Michael Whalen
Radiation Control Program
Massachusetts Department of Public Health
90 Washington Street
Dorchester, MA 02121

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT RELATED TO AN APPROVAL OF PROPOSED DISPOSAL PROCEDURES IN ACCORDANCE WITH 10 CFR 20.2002 FOR THE YANKEE NUCLEAR POWER STATION

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Division of Waste Management
and Environmental Protection
Office of Nuclear Material Safety
and Safeguards

Docket No. 50-029

Enclosure: Draft EA

December 1, 2005

Ms. Carla A. White
Vermont Department of Health
108 Cherry St.
P.O. Box 70 Burlington, VT 05402

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT RELATED TO AN APPROVAL OF PROPOSED DISPOSAL PROCEDURES IN ACCORDANCE WITH 10 CFR 20.2002 FOR THE YANKEE NUCLEAR POWER STATION

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and Environmental Protection
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and Safeguards

Docket No. 50-029

Enclosure: Draft EA

December 1, 2005

Mr. Tom Dente
Readsboro General Store
6828 Main St.
Readsboro, VT 05350

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT RELATED TO AN APPROVAL OF PROPOSED DISPOSAL PROCEDURES IN ACCORDANCE WITH 10 CFR 20.2002 FOR THE YANKEE NUCLEAR POWER STATION

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Docket No. 50-029
Enclosure: Draft EA

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OFFICE	DCD/PM	DCD/LA	DCD/SC
NAME	JHickman	CBurkhalter	CCraig
DATE	12/1/05	11/20/05	12/1 /05

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[7590-01-P]

NUCLEAR REGULATORY COMMISSION

[Docket No. 50-029]

Environmental Assessment and Finding of No Significant Impact

Related to Exemption of Material in Accordance with 10 CFR 20.2002 for Proposed

Disposal Procedures for the Yankee Atomic Electric Company

License DPR-003, Rowe, Massachusetts

AGENCY: Nuclear Regulatory Commission

ACTION: Environmental Assessment and Finding of No Significant Impact

FOR FURTHER INFORMATION CONTACT: John Hickman, Division of Waste Management and Environmental Protection, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Mail Stop T7E18, Washington, DC 20555-00001. Telephone: (301) 415-3017; email jbh@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

The U.S. Nuclear Regulatory Commission (NRC) staff is considering a request dated June 6, 2005, as supplemented by letter dated October 31, 2005, by the Yankee Atomic Electric Company (YAEC or Licensee), to approve the continued use of concrete blocks containing tritium as a retaining wall at an off-site location in Vermont. The request for approval is submitted pursuant to Section 20.2002 of Title 10 of the Code of Federal Regulations (10 CFR 20.2002), "Method of Obtaining Approval of Proposed Disposal Procedures." The licensee's proposed disposal is to demonstrate the material is exempt from Atomic Energy Act (AEA) and NRC licensing requirements and acceptable for continued use as a retaining wall at an off-site location.

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II. Environmental Assessment

Background:

YNPS is a deactivated pressurized-water nuclear reactor situated on a 30-acre site. The site is located in northwestern Massachusetts in Franklin County, near the southern Vermont border. The plant and most of the 30-acre site are owned by the YAEC. A small portion on the west side of the site (along the east bank of the Sherman Reservoir) is owned by USGen New England, Inc. The YNPS plant was constructed between 1958 and 1960 and operated commercially at 185 megawatts electric (after a 1963 upgrade) until 1992. In 1992, YAEC determined that closing of the plant would be in the best economic interest of its customers. In December 1993, NRC amended the YNPS operating license to retain a "possession-only" status. YAEC began dismantling and decommissioning activities at that time.

The waste material intended for disposal consists of concrete shield blocks from within the reactor support structure (RSS) that were removed, sand blasted, surveyed, and released from radiological controls in 1999. Forty of the shield blocks from the steam generator cubicles were removed from the site under an approved Massachusetts Department of Environmental Protection (MADEP) Beneficial Use Determination (BUD) and used to construct a retaining wall at a private residence in Readsboro, Vermont.

The retaining wall was built by the property owner atop a previous poured concrete retaining wall approximately 8 feet high along a stream. It consists of 35 interlocking blocks stacked 2 high with a nominal length of 250 feet. Gravel and soil has been back filled to the top of the new retaining wall. To preclude a fall hazard, the property owner added a chain link fence along the top of the wall. Thus, the majority of the surface areas of the blocks (to all but a small 1.5 foot wide strip at the top) in the wall are inaccessible.

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Five (5) other blocks were used for general retaining walls, two at the far end of the retaining wall, two on one side of the property's building structure and one on the opposite side of the structure. The blocks near the building structure have the greatest accessibility.

The 40 blocks used at the off-site location varied from approximately 5 feet to over 10 feet in length, 2 feet to 3 feet thick, and 3 feet high. The total weight of the blocks is 259 tons or 2.35E+8 grams. In addition, there were four smaller blocks which were used as weights for crane testing and one concrete slab from the turbine building, which were released and also sent to this off-site location. However, these five concrete blocks are not included in this request for alternate disposal because of the lack of detectable contamination in these blocks.

At the time of the shield block release, analyses of the radionuclide content of concrete within the reactor support structure indicated values less than the minimum detectable activity. Based on these results and surface contamination surveys, the shield blocks were determined to be free of detectable licensed radioactive material. These analyses were performed to the specified levels for 10 CFR part 61 waste classification requirements.

In 2004, as part of preparation for demolition and plans to retain RSS concrete on-site, the licensee performed further volumetric sampling and analysis of radionuclides. A lower limit of detection of 10 pCi/g for H-3 was established for the additional volumetric sampling, based upon the concrete derived concentration guideline limits and the requirements of the License Termination Plan (LTP). This analysis identified the presence of H-3 in essentially all concrete within the RSS. Levels of H-3 from samples taken in the proximity of the former location of the steam generator shield bocks indicated H-3 levels averaging approximately 200 pCi/g.

Based upon the results of samples of RSS concrete, the licensee subsequently had samples from the released shield bocks in Vermont analyzed for the suite of radionuclides listed in the LTP, using detection limits consistent with the requirements of the LTP. The results indicated detectable levels of only H-3 and C-14.

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This Environmental Assessment (EA) has been developed in accordance with the requirements of 10 CFR 51.21.

Proposed Action:

The proposed action is to allow the 40 concrete blocks to remain in place at the off-site location in Vermont. The proposed action is in accordance with the licensee's application dated June 6, 2005, as revised on October 31, 2005, requesting approval.

Need for Proposed Action:

Based upon the non-radiological risks associated with removing and returning the shield blocks back to the Yankee Rowe site, the preference of the property owner to keep the wall intact, and a small estimated dose to the public, the licensee has requested to allow the shield blocks to remain in place. This proposed action, would require the NRC to exempt the low-contaminated material authorized for disposal from further AEA and NRC licensing requirements.

Alternatives to the Proposed Action:

Alternatives to the proposed action include: (1) denying the request which would necessitate the removal of the shield blocks and returning them to the Yankee Rowe site. YAEC has determined that allowing the blocks to remain in place is less costly and non-radiologically hazardous than the alternative. Disposal of the demolition debris in the manner proposed is protective of the health and safety, is the most cost-effective alternative and safe alternative, and is most satisfying to the affected parties.

Environmental Impacts of the Proposed Action:

The NRC has completed its evaluation of the proposed action and concludes there are no significant radiological environmental impacts associated with allowing the shield blocks to remain in place on private property in Readsboro, Vermont.

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The licensee performed a dose analysis for the blocks using approved derived concentration guideline levels (DCGLs) for subsurface partial structures from the LTP. For this calculation, the licensee assumed:

1) the contaminants move out of the concrete into the groundwater, and the dose is incurred by subsequent use of this groundwater although due to the height of the wall in relation to the stream, water flow would be towards the adjacent stream and no wells currently exist on the property where the blocks are located and none can be drilled between the blocks and the stream;

2) a form of concrete (monoliths) and contamination similar to that found in the area in question;

3) a quantity of contaminated concrete that bounded the amount contained in the blocks in Vermont;

4) a DCGL based on an assumption that the subject person's entire diet (fruits, vegetables, grains, meat, fish, and milk) has been grown in the affected area, an activity which cannot be accomplished on the available area in question; and

5) the maximum average concentration of H-3 and C-14 in the blocks was the higher measured value either from the RSS sample or the Readsboro sample.

The analyses conservatively estimated the exposure to less than 1.0 mrem total dose per year. The proposed action will not significantly increase the probability or consequences of accidents and there is no significant increase in occupational or public radiation exposures.

With regard to potential non-radiological impacts, the proposed action does not have a potential to affect any historic sites. The retention of the blocks in their existing location does not affect non-radiological plant effluents, air quality, or noise.

The proposed action and attendant exemption of the material from further AEA and NRC licensing requirements will not significantly increase the probability or consequences of

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accidents, no changes are being made in the types of any effluents that may be released off site, and there is no significant increase in occupational or public radiation exposure.

Environmental Impacts of the Alternatives to the Proposed Action:

As an alternative to the proposed action, the staff considered denial of the proposed action. The implications from the denial alternative is that the blocks currently being used as a retaining wall would have to be removed and disposed of at an appropriate disposal facility. This alternative would require a significant industrial activity with an associated risk of injury. Although the contamination level is low, this alternative would also result in an increase in occupational exposure as a result of the removal and relocation process. Additionally, the transportation of the blocks from their present location to a disposal facility would add an air quality and transportation risk impact. Finally the property owner has indicated his desire to retain the blocks for the retaining wall. The removal of the blocks would necessitate a change to property usage or construction of an alternative wall, either of which would pose a significant financial impact to the property owner.

Agencies and Persons Consulted:

This EA was prepared by John B. Hickman, Project Manager, Decommissioning Directorate, Division of Waste Management and Environmental Protection (DWMEP). NRC staff determined that the proposed action is not a major decommissioning activity and will not affect listed or proposed endangered species, nor critical habitat. Therefore, no further consultation is required under Section 7 of the Endangered Species Act. Likewise, NRC staff determined that the proposed action is not the type of activity that has the potential to cause previously unconsidered effects on historic properties, as consultation for site decommissioning has been conducted previously. There are no additional impacts to historic properties associated with the disposal method and location for demolition debris. Therefore, no

consultation is required under Section 106 of the National Historic Preservation Act. The NRC provided a draft of its Environmental Assessment (EA) to the following individuals:

Mr. Dave Howland

Massachusetts Department of Environmental Protection

Western Regional Office

436 Dwight Street

Springfield, MA 01103

Mr. Michael Whalen

Radiation Control Program

Massachusetts Department of Public Health

90 Washington Street

Dorchester, MA 02121

Ms. Carla A. White

Vermont Department of Health

108 Cherry St.

P.O. Box 70 Burlington, VT 05402

The owner of the property where the blocks are currently located

Name and address withheld from public disclosure

draft

III. Finding of No Significant Impact

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

Sources Used:

- US NRC Power Reactor License: Yankee Atomic Electric Company Docket Number 050-00029, License Number DPR-03.
- Yankee Atomic Electric Company, June 6, 2005, Request for Approval of Proposed Procedures in Accordance with 10 CFR 20.2002, (ML051650291) as supplemented on October 31, 2005. (ML053120275)
- NRC 10 CFR 20.2002, "Method of Obtaining Approval of Proposed Disposal Procedures"
- NUREG-1640, "Radiological Assessment for Clearance of Materials from Nuclear Facilities."
- NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS Programs."
- NUREG -0586, Supplement 1, Generic Environmental Impact Statement of Decommissioning of Nuclear Facilities, November 2002.

IV. Further Information

For further details with respect to the proposed action, see the licensee's letter dated June 6, 2005, (ADAMS Accession No. ML051650291) as supplemented on October 31, 2005. (ADAMS Accession No. ML053120275) The NRC Public Documents Room is located at NRC Headquarters in Rockville, MD, and can be contacted at (800) 397-4209. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available

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records will be accessible electronically from the Agencywide Documents Access and Management System's (ADAMS) Public Library component on the NRC Web site, http://www.nrc.gov (the Public Electronic Reading Room). Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC PDR Reference staff by telephone at 1-800-397-4209, or 301-415-4737, or by e-mail at pdr@nrc.gov.

Dated at Rockville, Maryland, this th day of December, 2005.

FOR THE NUCLEAR REGULATORY COMMISSION

Daniel M. Gillen, Deputy Director
Decommissioning Directorate
Division of Waste Management and
Environmental Protection
Office of Nuclear Material Safety
and Safeguards

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