

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 December 22, 2004, as supplemented on February 7, 2005, by the Yankee Atomic Electric Company (YAEC or Licensee), to dispose of demolition debris from decommissioning of the Yankee Nuclear Power Station (YNPS) in Rowe, Massachusetts. 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 request states that the material is acceptable for burial at a Subtitle C Resources Conservation and Recovery Act (RCRA) hazardous waste disposal facility. The intended disposal location, Waste Control Specialists (WCS) located in Andrews, Texas has a RCRA permit issued by, and is regulated by, the State of Texas,

Texas Commission of Environmental Quality (TECQ), and any disposal must comply with State requirements. This action, if approved, would also exempt the slightly contaminated material from further Atomic Energy Act and NRC licensing requirements. The NRC has prepared an Environmental Assessment (EA) in support of this proposed action in accordance with the requirements of 10 CFR Part 51. Based on the EA, the NRC has determined that a Finding of No Significant Impact (FONSI) is appropriate.

II. Environmental Assessment

Background:

YNPS is a deactivated pressurized-water nuclear reactor situated on a small portion of a 2,200-acre site. The site is located in northwestern Massachusetts in Franklin County, near the southern Vermont border. The plant and most of the 2,200-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. On November 24, 2003, in accordance with 10 CFR 50.82, YAEC submitted a License Termination Plan (LTP) for NRC approval. The LTP is still under review by the NRC.

The waste material (the demolition debris) intended for disposal includes structural steel, soils associated with foundation excavations and PCB remediation, and concrete and/or

pavement or other similar solid materials. The waste material proposed for disposal at the WCS facility will originate from the demolition and removal of structures and paved surfaces at the YNPS plant site, after the structure/surface has been decontaminated to remove areas of contamination above the release limits.

The physical form of this demolition debris will be that of bulk material of various sizes ranging from the size of sand grains up to occasional monoliths with a volume of several cubic feet. YAEC, for the purpose of calculations, assumed the material to be a homogeneous mixture with a specific density of 1 gram per cubic centimeter during shipment and 1.5 grams per cubic centimeter after compaction in the disposal cell at WCS. The material will be dry solid waste containing no absorbents or chelating agents. It is estimated that the mass of demolition debris originating from the decommissioning of the YNPS will total approximately 60 million pounds. After compaction, the estimated volume of material to be disposed of is approximately 250,000 cubic feet.

Proposed Action:

The proposed action is to approve the removal of approximately 30,000 tons of demolition debris from the YNPS, in Rowe, Massachusetts, transportation of the debris and disposition at the WCS facility in Andrews, Texas. The proposed action would also exempt the low-contamination material from further Atomic Energy Act and NRC licensing requirements. The 30,000 tons of demolition debris will consist of Steel, Soil and Asphalt, Reactor Support Structure (RSS) Concrete, and other Concrete. The proposed action is in accordance with the licensee's application dated December 22, 2004, as supplemented on February 7, 2005, requesting approval.

Need for Proposed Action:

The licensee needs to dispose of 30,000 tons of demolition debris since the YNPS site is currently conducting decontamination and decommissioning as allowed by 10 CFR 50.82. The licensee proposes to dispose of 30,000 tons of demolition debris at the WCS facility in Andrews, Texas, which is a Subtitle C RCRA hazardous waste disposal facility. This proposed action, would also require 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) no action alternative, (2) decontamination of the buildings and structures before demolition, or of the debris until no contamination can be detected, (3) decontaminating and conducting final status surveys of the buildings, and (4) handling demolition debris as low-level radioactive waste and shipping them to a low-level waste facility. YAEC has determined that disposal for these demolition wastes in a Subtitle C RCRA hazardous waste disposal facility is less costly than alternatives 2, 3 and 4. Disposal of the demolition debris in the manner proposed is protective of the health and safety, and is the most cost-effective alternative.

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 the disposal of 30,000 tons of demolition debris at WCS, a Subtitle C Resources Conservation and Recovery Act (RCRA) hazardous waste disposal facility. This evaluation is for the disposal of the demolition debris at WCS irrespective of other materials disposed of at the facility. The licensee's analysis used conservative estimates of the average radionuclide

concentrations based on ongoing site characterization. The licensee analyzed the dose to a transport driver, loader, disposal facility worker, and long-term impacts to a resident. Each of the analyses conservatively estimated the exposure to be less than 1.0 mrem total dose per year. The NRC has reviewed the licensee's analysis and agrees with the determination that the proposed action will not significantly increase occupational or public radiation exposures. The licensee's supplemental submittal provided an evaluation for an alternative transportation plan utilizing intermodal containers on a rail transport car. The licensee's analysis demonstrated that the exposure to workers involved in this shipment option was bounded by the analysis for truck shipment. The NRC has reviewed this analysis and agreed that the analysis for shipment by truck was bounding.

With regard to potential non-radiological impacts, the disposal of demolition debris does not affect non-radiological plant effluents. There may be a slight decrease in air quality and slight increase in noise impacts during the loading and transportation of the demolition debris. However, there are no expected adverse impacts to air quality as a result of the loading and transportation of the demolition debris. The disposal of demolition debris does not take place in the vicinity of any identified historic sites. Therefore, the proposed action does not have a potential to affect any historic sites.

YAEC initial submittal estimates that transportation of the demolition debris will require approximately 2,000 truck shipments. There is no anticipated overall impact from the alternate disposal as the shipping effort represents a small fraction of the national commercial freight activity. The total tonnage to be shipped represents <0.0005 % of the total U.S. annual commercial freight trucking activity (based on 2002 data). Similarly, the total ton-miles for the alternate disposal represents <0.0087% of the total U.S. annual

commercial freight trucking activity in the same time period. Additionally, these activities will be short in duration and minimal as compared to prior transportation of uncontaminated demolition debris from the YNPS. Therefore, there are no significant non-radiological environmental impacts associated with the proposed action.

Environmental Impacts of the Alternatives to the Proposed Action:

As an alternative to the proposed action, the staff considered denial of the proposed action (i.e., the “no-action” alternative). The implications from the no-action alternative is that the demolition debris would remain on site until disposition sometime in the future. The impacts would therefore be limited to the site, and there would be no transportation impacts and no disposal considerations or impacts until sometime in the future.

Two of the alternatives to the proposed action would be to decontaminate the buildings and structures prior to demolition or final status survey. The environmental impacts as a result of this alternative would decrease air quality, and increase the noise and water usage, as necessary, during the decontamination process. Additionally, there would be an increase in occupational exposure as a result of the decontamination process.

Disposing of the demolition debris in a low-level waste disposal facility is another alternative to the proposed action. This alternative has similar environmental impacts as the proposed action but is more expensive.

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 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 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, Regional Engineer
Massachusetts Department of Environmental Protection
Western Regional Office
436 Dwight Street
Springfield, MA 01103
Hartford, CT 06106-5127

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

Ms. Ruth McBurney
Texas Department of State Health Services
Radiation Control
1100 West 49th Street
Austin, Texas 78756-3189

Ms. Susan Jablonski
Texas Commission on Environmental Quality
Mail Code 122
P.O. Box 13087
Austin, Texas 78711-3087

The Massachusetts Department of Environmental Protection stated the expectation that material leaving the YNPS site for disposal at WCS will be handled and transported

consistent with all applicable Massachusetts Law and Regulation. The NRC staff also expects licensees to comply with all applicable transportation laws and regulations.

The Texas Department of State Health Services (DSHS) provided several comments by letter dated March 24, 2005. In response to the DSHS comments, a statement was added to the Environmental Impacts of the Proposed Action section that this evaluation is for the disposal of the demolition debris at a Subtitle C RCRA hazardous waste disposal facility irrespective of other materials disposed of at the facility. In addition, the Texas licensing authority over the WCS facility was clarified.

DSHS also commented on the necessity of compliance with State regulatory requirements. The staff agrees with that comment and believes that the statement that, "any disposal must comply with State requirements," adequately addresses that issue.

The Texas Commission on Environmental Quality (TCEQ) provided comments by letter dated April 26, 2005. The primary focus of the TCEQ comments were on the Texas licensing requirements for the WCS facility and the authority for WCS to receive the radioactive material. This NRC action would permit Yankee to dispose of slightly contaminated demolition debris at the WCS facility, but does not authorize WCS to accept

any material it is not otherwise licensed to receive under Texas licensing authority. As previously noted, “any disposal must comply with State requirements.”

TCEQ also noted that only the bounding transportation option, truck shipment, was addressed in the draft EA. The EA has been revised to address the rail shipment option as well.

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, December 22, 2004, Request for Approval of Proposed Procedures in Accordance with 10 CFR 20.2002 for alternate disposal at the Waste Control Specialist, LLC Facility in Andrews, Texas, (ML050110132) as supplemented on February 7, 2005. (ADAMS Accession Number ML050470301)
- 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."
- US DOT, Bureau of Transportation Statistics, "Transportation Statistics Annual Report," September 2004.
- US DOT, Bureau of Transportation Statistics, "Freight Shipments in America," April 2004.
- 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 December 22, 2004 (ADAMS Accession No. ML050110132), as supplemented on February 7, 2005 (ADAMS Accession No. ML050470301.) 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 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 28th day of April, 2005.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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and Environmental Protection
Office of Nuclear Material Safety
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