

March 5, 2004

Mr. Michael Cook, Director
Office of Emergency and Remedial Response
U.S. Environmental Protection Agency
Washington, DC 20460

SUBJECT: NOTIFICATION OF THE DECOMMISSIONING OF THE CONNECTICUT
YANKEE ATOMIC POWER COMPANY'S HADDAM NECK SITE

Dear Mr. Cook:

This letter is intended to notify you of the decommissioning oversight actions that the U.S. Nuclear Regulatory Commission (NRC) has taken and intends to take for the Connecticut Yankee Atomic Power Company's Haddam Neck site (Haddam Neck).

On October 9, 2002, the NRC and the U.S. Environmental Protection Agency (EPA) entered into a Memorandum of Understanding (MOU) on "Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites." Under the MOU, EPA agreed to continue its Comprehensive Environmental Response, Compensation, and Liability Act deferral policy of not listing sites on the National Priorities List that are subject to NRC's licensing authority. The MOU provides that, unless an NRC-licensed site exceeds any of three trigger criteria contained in the MOU, EPA agrees to a policy of deferral to NRC decision-making on decommissioning without the need for consultation.

For sites that trigger the criteria in the MOU, NRC will consult with EPA at two points in the decommissioning process: (1) prior to NRC's approval of the license termination plan (LTP) or decommissioning plan (DP), which NRC terms Level 1 consultation; and (2) following completion of the Final Status Survey (FSS), which NRC terms Level 2 consultation. Although the NRC's plan for consulting with EPA calls for the initial Level 1 consultation to occur early in the decommissioning process, at the time the MOU was signed NRC had several sites which were in the latter stages of the LTP/DP process. Since these sites were further along in the decommissioning process, the next opportunity to consult with EPA would be a Level 2 consultation following the completion of the FSS.

This letter is to notify you of the existence of one of these sites. This letter is not considered a Level 1 consultation because this site already has an approved license termination plan. However, the NRC believes it is in the spirit of the MOU to notify the EPA of sites which could possibly require a Level 2 consultation in the future, and were already well into the decommissioning process at the time the MOU was signed.

The Haddam Neck Site

The Haddam Neck site is located on the east bank of the Connecticut River, approximately 21 miles south-southeast of Hartford. The plant, a 1825-megawatt (thermal) reactor, began power operation on August 7, 1967. After 19 operation cycles and over 7750 effective full power days,

the plant was shut down on July 22, 1996. On December 5, 1996, the licensee certified permanent cessation of operations. The Post-Shutdown Decommissioning Activities Report (PSDAR) was submitted August 22, 1997, in which the licensee elected to pursue active decommissioning. In April 1999, decontamination and dismantlement activities began, consistent with the PSDAR. Subsequently, the licensee submitted a LTP on July 7, 2000. NRC completed its review of the LTP on November 25, 2002. Major components have been removed, including the steam generators, pressurizer, and reactor vessel.

Since the Haddam Neck site already has an approved LTP, the general time period for having a Level 1 consultation has passed. However, the approved LTP for this site contains derived concentration guideline levels (DCGLs) for 20 radionuclides, which are provided in the enclosed table. The DCGLs for 15 of these radionuclides exceed the MOU trigger values for soil [*i.e.*, tritium (H-3), niobium-94, cesium-137 (Cs-137), europium-152 (Eu-152), and Eu-154]; and/or groundwater [H-3, carbon-14, manganese-54, iron-55, cobalt-60, nickel-63, strontium-90, technetium-99, Cs-134, Cs-137, Eu-152, Eu-154, Eu-155, and plutonium-241)].

Before the NRC license is terminated the doses to the average member of the critical group at the Haddam Neck site will be in compliance with NRC's criteria in Part 20 Subpart E that provides all-pathways dose criteria of 0.25 millisieverts per year (25 millirem per year) plus as low as reasonably achievable (ALARA), to an average member of the critical group. The dose criteria in Part 20 Subpart E are fully protective of the public health and safety, and were the result of a comprehensive rulemaking, including an accompanying generic environmental impact statement. Furthermore, individuals at a decommissioned site are expected to receive doses substantially below the constraint level because of ALARA, conservative dose modeling assumptions, and the nature of the cleanup process itself, which often reduces residual contamination levels significantly below site DCGLs. Another reason the residual radioactivity at the site is expected to be much lower than the approved DCGL values is that the final cleanup values that will be used at this site to achieve 25 millirem per year must be based on an all pathways, sum of the fractions approach. The DCGLs in the LTP represent the maximum levels for each radionuclide without considering the existence of other radionuclides. Thus, in applying the sum of the fraction requirement, the actual cleanup values will be reduced to ensure that the potential dose from all residual radioactivity at the site in all media is less than 25 millirem per year.

Based on NRC's decommissioning experience, a Level 2 consultation might not be necessary, because the levels of residual radioactivity remaining after remediation could be lower than the MOU trigger levels. However, if the residual radioactive material concentration levels in soil at the time of license termination still exceed the MOU trigger values, NRC will enter into Level 2 consultation with the EPA in accordance with the MOU.

As part of the LTP review and approval process, the NRC staff prepared and published, for public comment, an environmental assessment (EA) to document how site remediation at Haddam Neck would ensure protection of the public health and safety and the environment.¹

¹ The EA is available in NRC's electronic reading room at <http://www.nrc.gov/reading-rm.html> (ML022670351). Also available in NRC's electronic reading room are EPA's June 24, 2002, comments on the EA (ML021900332) and NRC's September 27, 2002, response to EPA's comments (ML022530460).

The EA was published in the Federal Register on November 4, 2002, at 67 FR 67212, and concludes that approval of the LTP would not result in any significant impacts on the human environment and is protective of human health. In addition, the approval of the LTP was based on the NRC staff's Safety Evaluation Report (SER) issued on November 25, 2002.² The SER concluded that the activities described in the LTP were consistent with the Commission's regulations and that approval of the LTP would not be inimical to the common defense and security, or to the health and safety of the public.

Next Steps

Following site remediation activities at Haddam Neck, NRC staff will review information contained in the FSS Reports and compare the remaining levels of residual radioactivity to the MOU trigger levels. If the FSS measurements trigger the MOU, an additional consultation between the agencies will occur under the MOU to identify and resolve any remaining issues. In the meantime, if you have any questions regarding this letter or the remediation activities at Haddam Neck, please contact Mr. John Greeves, Director of the Division of Waste Management, at 301-415-7437.

Sincerely,
/RA/

Martin J. Virgilio, Director
Office of Nuclear Material Safety
and Safeguards

Enclosure: Proposed Remediation Values at the Connecticut Yankee Site

cc: Connecticut Yankee Haddam Neck Site Contact List

² The EA is available in NRC's electronic reading room (ML022670388).

**PROPOSED REMEDIATION VALUES
AT THE CONNECTICUT YANKEE SITE**

Radionuclide	DCGL (soil)*	MOU (soil)	DCGL** (groundwater)	MOU (groundwater)
H-3	412	228	652,000	20,000
C-14	5.66	46	9,010	2,000
Mn-54	17.4	69	24,200	300
Fe-55	27,400	269,000	65,400	2,000
Co-60	3.81	4	1,140	100
Ni-63	723	9,480	31,500	50
Sr-90	1.55	23	251	8
Nb-94	7.12	2	6,750	---
Tc-99	12.6	25	26,400	900
Ag-108m	7.14	---	4,240	---
Cs-134	4.67	46	342	80
Cs-137	7.91	6	431	200
Eu-152	10.1	4	7,330	200
Eu-154	9.29	5	5,050	60
Eu-155	392	---	32,500	600
Pu-238	29.6	297	15.1	15***
Pu-239	26.7	259	13.6	15***
Pu-241	870	40,600	460	300
Am-241	25.8	187	13	15***
Cm-243	29	35	19	15***

*soil values reported in pCi/g

**groundwater values reported in pCi/l

***15 pCi/L is total for all alpha emitters