

*-NMSS*  
*REG. I*  
*-NRR* *-NRR*  
From: John Greeves  
To: George Pangburn, Michael Masnik, Stuart Richards  
Date: Thu, Jun 29, 2000 8:18 PM  
Subject: Fwd: Comments on Draft LTP for CT Yankee

When the utilities ask EPA will walk if not run onto the site. fyi see attached.

jtg

*-NMSS* *-NMSS* *-NMSS*  
CC: Camper, Larry, Christiana Lui, Essig, Thomas, H...

J-34

**From:** <Rosenstein.Marv@epamail.epa.gov>  
**To:** GATED.nrcsmtp("Higgins.Elizabeth@epamail.epa.gov",...  
**Date:** Thu, Jun 29, 2000 5:14 PM  
**Subject:** Comments on Draft LTP for CT Yankee

Attached please find the comments we faxed today to CY. Some of you will be getting hard copies as well. CY had sent us the draft and requested our comments.

The Draft was reviewed by both EPA New England and EPA ORIA. We restricted ourselves to general comments, but may have additional detailed comments after we review the LTP that CY actually submits to NRC. We understand that CY will be doing so in the next few days. Such comments would likely be pursued with NRC as EPA and NRC have agreed to do for our detailed comments on the Maine Yankee LTP.

Marv

(See attached file: cydraftltp.wpd)

**CC:** TWFN\_DO.twf4\_po(LWC,JTG1)

(Greeves, NMSS)

June 30, 2000

Mr. Ken Heider, Vice-President for Decommissioning Operations  
Connecticut Yankee Atomic Power Company  
362 Injun Hollow Road  
East Hampton, CT 06424

RE: Draft Haddam Neck Plant License Termination Plan

Dear Mr. Heider:

On behalf of the Environmental Protection Agency (EPA), I am responding to Connecticut Yankee's (CY) request for comments on the Draft Haddam Neck License Termination Plan (LTP).

As you know, CY, EPA, the Nuclear Regulatory Commission (NRC) and the Connecticut Department of Environmental Protection (DEP) have had a number of informal discussions to discuss the different Agency roles and responsibilities in the past year. We are fully aware that the NRC has federal primacy for the radiological aspects of decommissioning, and that CY understands that at the federal level EPA has the regulatory primacy for chemical contamination. Our goal is to work cooperatively with you, the NRC and the CT DEP in an integrated manner such that all federal and state regulatory requirements, including those of the National Environmental Policy Act (NEPA) are met, thus assuring the protection of the public health and the environment.

We appreciate the opportunity CY has provided to review the Draft LTP, and offer the following comments in a spirit of mutual understanding and cooperation among all parties concerned. We are providing a copy of this letter to both NRC and the CT DEP, and look forward to working with them and you as the relevant federal and state regulatory processes are implemented.

Because the LTP is in draft form, and given that some of the information referenced in the document was not available to EPA, and our desire to provide timely input, we are restricting our comments to major, overarching issues. We may have additional detailed comments in the future as we review the LTP to be submitted to the NRC and the additional background documents that provide much of the information upon which the LTP is based. We commit to work with you, the NRC and DEP and to make ourselves available in an appropriate manner and in a timely way per

everyone's needs.

1. The Draft LTP is based on a demonstration of meeting the NRC criteria of 25 mrem plus ALARA. We understand from our meetings and phone calls with CY that you intend to also satisfy other standards such as those that the DEP may set. EPA suggests that whatever standards you plan to meet, the remedial methods for meeting them, and the of modeling and monitoring analyses demonstrating that they will be met, be adequately documented and subject to public scrutiny.

2. The Draft LTP indicates that the buildings will be decontaminated to meet NRC site release criteria (or other criteria as discussed above) prior to any crushing of demolition debris and subsequent burial in basement foundations. It is not clear that the contamination of the basement foundation walls and floors are included in all modeling and monitoring analyses to demonstrate that the chosen clean-up criteria will be met.

3. We understand that the NRC does not require that the LTP address chemical contamination and clean-up. While there is some mention of chemical contamination in the Draft LTP, it is not surprising that the draft LTP does not adequately characterize either chemical contamination or clean-up plans for it. We appreciate that CY has committed to address those issues within the regulatory processes of EPA and DEP. We suggest that this commitment be made more clear in the LTP.

4. It is EPA's responsibility to advise NRC on meeting its NEPA responsibilities. The purpose of Chapter 8 of the LTP (Environmental Report Supplement) is to provide NRC information that it can use in assessing the environmental impacts associated with decommissioning. From this, NRC will have to determine the extent of the NEPA documentation that it will require, and EPA expects to provide input on this issue. We are concerned that CY may not have provided sufficient analysis of potential environmental impacts for these purposes.

Chapter 8 of the Draft LTP is primarily conclusory in nature, and depends heavily upon an NRC Generic Environmental Impact Statement (that is in the process of being updated by the NRC), a 1973 site-specific Environmental Impact Statement (EIS) that did not address decommissioning, and the CY PSDAR that also discussed anticipated environmental impacts in a cursory manner. The Supplement would likely be more useful to NRC if it were more robust, particularly with current data assessments, and did not cross reference outdated documents as much.

5. We have two additional preliminary comments that are more technical in nature:

a. The Draft LTP provides little information on background radioactivity and how this issue will affect survey design, and more importantly, assessment of survey results. For example, there is no discussion of the difficulties in determining a background radiation distribution in areas with multiple media with different background levels (e.g. wood, metal, concrete, paint), or of problems with the geometry of measurement locations (e.g. direct measurement and scanning results increase in corners because of the wall effects). We suggest that these issues be addressed

in order to determine if the survey and assessment design will properly account for background radiation.

b. The Quality Assurance and Control (QAC) Section appears "after the fact", as opposed to having been developed concurrently with the activities that fall under its purview. The CY Quality Assurance Program is mentioned, but was not available for our review. We suggest that it should be an integral part of the LTP to provide the links between QAC requirements and specific activities. This is especially important with respect to the derivation of site-specific Data Quality Objectives, as detailed under MARSSIM. Quality Control for MARSSIM surveys should also include survey-specific values and assumptions that have been used to develop the survey design.

Again, thank you for the opportunity for this preliminary review of the Draft LTP. We look forward to working with CY, NRC and DEP as the various regulatory processes move forward.

Marv Rosenstein

Associate Director for Pesticides, Toxics and Radiation  
Office of Ecosystems Protection  
EPA New England

cc: Gerry van Noordennen, CY  
Dr. Edward Wilds, CT DEP  
John Greeves, NRC  
Larry Camper, NRC  
John Karhnak, EPA ORIA  
Brian Littleton, EPA ORIA  
Jim Cherniack, EPA New England  
Carl Dierker, EPA New England  
Dave Rothstein, EPA New England  
Juan Perez, EPA New England



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

August 3, 2000

MEMORANDUM TO: Stuart A. Richards, Director  
Project Directorate IV and Decommissioning  
Division of Licensing Project Management, NRR

FROM: Larry W. Camper, Chief  
Decommissioning Branch  
Division of Waste Management, NMSS

SUBJECT: ACCEPTANCE REVIEW OF THE HADDAM NECK  
PLANT LICENSE TERMINATION PLAN

My staff has completed an acceptance review of the Haddam Neck Plant (License No. DPR-61) License Termination Plan (LTP) submitted by letter dated July 7, 2000. Based on our review, we have determined that the licensee has provided sufficient information for us to proceed with our detailed technical review.

The acceptance review for the LTP was based on information identified in Regulatory Guide 1.179, "Standard Format and Content of License Termination Plans for Nuclear Power Reactors," and NUREG-1700, "Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans."

We plan to develop a schedule for the technical review within 45 days. We will coordinate development of the schedule with your staff.

Our lead reviewer will be Larry Pittiglio. Please contact him if you have any questions.

Docket No. 50-309  
License No. DPR-61

CONTACT: Larry Pittiglio  
(301) 415-6702

May 16, 2002

NOTE TO: File

FROM: Joseph Donoghue 1RA/

SUBJECT: HADDAM NECK GROUNDWATER SAMPLE INFORMATION

The attached Condition Report (CR No. 01-0406) and the e-mail from Connecticut Yankee discloses groundwater sampling results from the Haddam Neck site. The information was considered during the staff's review of the Haddam Neck Plant License Termination Plan.

Docket No. 50-213

Attachments: As stated

DISTRIBUTION:

PUBLIC

PDIV-2 R/File

RidsNrrPMJDonoghue

RidsNrrLAMMcAllister

SBrown, NMSS (SWB1)

ACCESSION NO. ML021290419

PACKAGE:ML021290426

ATTACHMENT 1: ML021150401

ATTACHMENT 2: ML021150409

OFC	PDIV-2/PM	PDIV-1/LA	PDIV-2/SC
NAME	JDonoghue: as	MMcAllister	SDembek
DATE	5/14/2002	5/14/02	5/16/02

C:\MYFILES\Checkout\NOTE Sr 90.wpd

OFFICIAL RECORD COPY



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

May 16, 2002

NOTE TO: File

FROM: Joseph Donoghue

A handwritten signature in dark ink, appearing to be "JD", is written over the name "Joseph Donoghue".

SUBJECT: HADDAM NECK GROUNDWATER SAMPLE INFORMATION

The attached Condition Report (CR No. 01-0406) and the e-mail from Connecticut Yankee discloses groundwater sampling results from the Haddam Neck site. The information was considered during the staff's review of the Haddam Neck Plant License Termination Plan.

Docket No. 50-213

Attachments: As stated



Attachment 1  
Condition Report  
Initiation Form  
CR No. 01-0406

Provide the following information to the best of your ability. Provide enough information so the issue can be understood by others who will review it. Refer to instructions following this form.

**CAUTION**

*If you believe the condition could have an immediate effect on plant safety, the ability of plant equipment to operate properly, or someone could be injured if the issue is not addressed immediately, NOTIFY your supervisor or the Shift Manager in the Control Room Immediately.*

**Condition Information** Initiator completes blocks 1 - 10. Print all information.

1. Describe the condition: Results of Special Mat Sump Sample Received

The results of a special analysis of the containment mat sump water have been received. Although additional sample analyses are yet to be completed, the results to date have shown detectable levels of Strontium-90 in the mat sump sample. Analysis for this radionuclide is not known to have been previously conducted for mat sump water.

2. What initial actions were taken as a result of the condition?

As a precaution, the mat sump discharge has been secured until the significance of this condition can be determined. Calculations have begun to determine the effect of including this additional radionuclide in effluent release calculations.

3. What do you know or suspect was the cause of the condition?

Definitive Cause Unknown

4. What do you recommend as corrective action(s)?

1. Secure mat sump discharges until the effect of this condition has been evaluated.
2. Evaluate sample analysis protocol for mat sump discharges.

5. Initiated By (Print Name): Ext. # if available CY Dept.: Safety Oversight  
Richard N. McGrath 3573 Bechtel Dept.

6. Date/Time:  
10/5/01 15:00

7. Units Affected: ☒ CY ☒ Yankee Rowe ☒ Maine Yankee

8. What structures, systems, and components are affected? None

9. Is material being held? Yes ☒ No  
Sample consumed by analysis protocol  
Where is material being held? N/A

10. Do you want written feedback on action taken? Yes ☒ No

11. Supervisor Signature: (Optional) \_\_\_\_\_

Supervisor Comments: \_\_\_\_\_

From: "Gerry Van Noordennen" <vannogp@connyankee.com>  
 To: <jed1@nrc.gov>  
 Date: Wed, Oct 10, 2001 6:18 PM  
 Subject: FW: GW Well data.xls

Joe,

Attached is the latest information we have on CR 01-0406, Detectable Levels of SR-90 in Mat Sump. I will fax you the CR also.

Gerry

-----Original Message-----

From: Richard McGrath [mailto:mcgrarn@connyankee.com]  
 Sent: Wednesday, October 10, 2001 4:49 PM  
 To: Heider Ken  
 Cc: Van Noordennen Gerry; Fetherston Noah  
 Subject: GW Well data.xls

Ken, The attachments show the gross beta and nuclide specific analysis results you asked for. We only performed analysis for Gross Beta for the samples taken in March and April of 1999. As you can see, there appears to be a strong correlation between Gross Beta values greater than 50 pCi/li and the presence of Sr-90 in the groundwater. Also on Table 1, I have bolded the gross activity results for which nuclide specific analysis should be performed. With the above in mind, the following steps as a minimum are planned:

1. Well 105S will be resampled tomorrow and a split of the sample sent to two labs.
2. Sample analysis for the next round of samples (Scheduled to be taken by the end of the month) will be expanded. There are two columns in Table 1 that define the special analyses planned. The philosophy of these additional analyses is as follows:
  - a. Analyze wells for which HTDNs have been found to allow tracking. Gross beta analysis will allow additional trending for these and other wells.
  - b. Investigate via nuclide specific analysis, any wells that have shown elevated gross activity analysis results.
  - c. Analyse all wells down gradient from the plume for HTDNs to insure that only tritium is reaching the river.
  - d. Analyse other wells in the RCA in the plume region for Beta HTDNs to allow enveloping of the plume and to provide info for determining plume travel paths for HTDNs.

3. Additional work yet to be discussed:

- a. Effect on the Groundwater Monitoring Work Plan (Gerry Van is the lead)
- b. Additional soil characterization work. This would appear to be Bechtel scope of work.

Let me know if you need anything else.

Rich

**Table 1**  
**Groundwater Sample Results and Future Sample Plan**

Well ID #		Gross Alpha		Results	Plan for Next	Gross Beta		Results of	Plan for Next
A. Wells for which Nuclide Specific Analysis Performed		Mar-99 pCi/li	Apr-99 pCi/li	of Alpha Spec.	Round Alpha Analysis	Mar-99 pCi/li	Apr-99 pCi/li	HTDN Analysis	Round Alpha Analysis
103D	Near RWST	<6.3	9.2	No Alpha	Gross Only	13	5.3	Tc-99 @ MDC	Gross/HTDN
103S	Near RWST	9.4	11.7	No Alpha	Gross Only	89.8	60.3	Sr-90/2.55pCi/li	Gross/HTDN
105S	7 o'clock to Cnmt.	<6.3	6.4	No Alpha	Gross Only	246.4	157.5	Sr-90/129pCi/li	Gross/HTDN
106S	5 o'clock to Cnmt.	<6.3	<4.8	No Alpha	Gross Only	35.6	55	Sr-90/6 pCi/li	Gross/HTDN
109D	By River west of Cnmt.	8.5	12.4	No Alpha	Gross Only	7.9	4.3	No Beta	Gross/HTDN
110D	By River s/w of Cnmt.	19.1	20.6	No Alpha	Gross Only	18	12.8	No Beta	Gross/HTDN
111S	On Peninsula by Septic	41.9	14	No Alpha	Gross Only	24.3	9.8	No Beta	Gross/HTDN
201	At Landfill	<3.9	<3.6	Alpha@MDC	Alpha Spec	3.3	4.8	No Beta	Gross Only
207	At Landfill	<3.9	<3.3	No Alpha	Gross Only	3.6	5.3	No Beta	Gross Only
<b>B. Wells To Be Analyzed with Intermittent and/or Abnormally High Gross Alpha or Gross Beta</b>									
EOF	EOF Well Water(WSW))	22.9	33.4	Not Analyzed	Alpha Spec	14.3	6	Not Analyzed	Gross Only
115S	West of Fuel Bldg.	<6.9	7.3	Not Analyzed	Gross Only	11.6	159.8	Not Analyzed	Gross/HTDN
203	At Landfill	<3.9	<3.1	Not Analyzed	Gross Only	<2.7	198.6	Not Analyzed	Gross/HTDN
<b>C. Other Wells to be Analyzed for HTDNs to Envelope Possible Plume/Provide Info</b>									
102D	East of Fuel Bldg	11.2	10.7	Not Analyzed	Gross Only	17.9	5.2	Not Analyzed	Gross/HTDN
105D	7 o'clock to Cnmt.	<5.8	6.5	Not Analyzed	Gross Only	5.7	10.2	Not Analyzed	Gross/HTDN
106D	5 o'clock to Cnmt.	6.1	5.7	Not Analyzed	Gross Only	5.4	<3.2	Not Analyzed	Gross/HTDN

**Table 2**  
Connecticut Yankee Atomic Power Company

Summary - Groundwater Analyses  
Plant-related Alpha Spectroscopy and Hard To Detect Radionuclides

June 2001

Radionuclide	Monitoring Well Location								
	MW-103D	MW-103S	MW-105S	MW-106S	MW-109D	MW-110D	MW-111S	MW-201	MW-207
Americium 241	<0.22	<0.33	<0.22	<0.31	<0.32	<0.31	<0.26	<0.30	<0.21
Technetium-99 (liquid scintillation)	3.9 J	<3.8	<4.2	<4.1	<4.8	<4.1	<3.9	<3.8	<4.6
Strontium-90 (905.5 by GPC)	<0.69	2.55 J	129 */120	6.6	<0.82	<0.81	<0.68	<0.63	<1.3
Strontium-89 (905.5 by GPC)	<0.9	<0.81	<1.0	<1.8	<1.4	<1.2	<1.0	<1.0	<2.1
Nickel-63	<16.6	<14.7	<16.8	<15.2	<15.0	<17.1	<15.8	<17.8	<18.2
Iron-55	<49.7	<49.2	<53.5	<49.8	<51.4	<50.8	<50.9	<53.6	<50.5
Plutonium-241 (liquid scintillation)	<14.8	<11.6	<12.5	<11.9	<13.2	<16.9	<13.4	<9.22	<9.68
Plutonium-238 (Alpha Spec)	<0.16	<0.13	<0.13	<0.13	<0.21	<0.17	<0.15	<0.30	<0.19
Plutonium-239/240 (Alpha Spec)	<0.29	<0.13	<0.19	<0.19	<0.14	<0.26	<0.22	0.379J	<0.28
Curium 243 (Alpha Spec)	<0.16	<0.16	<0.22	<0.19	<0.26	<0.15	<0.17	<0.15	<0.14
Curium 244 (Alpha Spec)	<0.12	<0.14	<0.12	<0.23	<0.14	<0.18	<0.20	<0.12	<0.19

Notes: Bold values represent detections.

All reported concentraions are in picocuries per liter (pCi/L)

<0.22: represents less than the MDC value.

J: Represents estimated value, greater than sample detection limit but less than reporting limit.

129 \* : MW-105S sample result was re-evaluated for Strontium 90. The re-analysis was returned at 120.

MW-201: MDC for this sample was 0.205 pCi/L with an associated total uncertainty of 0.35 pCi/L, Plutonium-:

*Revised*