

December 29, 2000

Docket No: NRC-0000/0002-2000

The United States Nuclear Regulatory Commission  
Attention: Mr. L.L. Wheeler, Mail Stop 07-C2  
Office of Nuclear Reactor Regulation  
Washington D.C.  
20055-0001

Dear Mr. Wheeler:

Enclosed is a copy of the Connecticut Department of Environmental Protection's (DEP) Division of Radiation's initial comments based upon our review of Connecticut Yankee's (CY) License Termination Plan (LTP). This has been performed pursuant to the General Statutes of Connecticut, Chapter 446 Section 22a-135 **Duties of Department of Environmental Protection re nuclear energy and radiation**" paragraph (9) **study plans for, and hazards inherent in the decommissioning of Connecticut nuclear plants including the possible future use of land now in use by a nuclear power facility**".

The Division has prepared these comments relative to the release criteria established in 10 CFR 20 Subpart E Radiological Criteria for License Termination. The Division is cognizant of the CY's requirement to meet this release criterion as a licensee of the United States Nuclear Regulatory Commission. However, it should be understood that the Division expects the licensee to additionally satisfy the release criteria developed by the Division.

The Division submits these comments with the reservation and understanding that these comments are not final and absolute.

The Division looks forward to working with the Nuclear Regulatory Commission (NRC) on this project. If you have any questions or seek additional information on these comments please feel free to contact Mr. Michael E. Firsick of my staff. He can be reached at (860) 424-3517 or electronically at the following e-mail address [michael.firsick@po.state.ct.us](mailto:michael.firsick@po.state.ct.us).

Sincerely,

Edward L. Wilds, Jr., Ph.D.  
Director, Division of Radiation

ELW:mf

Enclosure

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1. Section 1.3.5 states: *“The HNP survey plan allows for the use of advanced technologies as long as the survey quality is equal to or better than traditional methods described in MARSSIM.”* What standards will be used to determine what is equal to or better and will the regulators, i.e. (NRC/DEP) have a chance to provide comment on these standards?
2. Section 1.4.1 states: *“CYAPCO plans to communicate the schedules for these final status surveys, to the NRC so that independent confirmatory surveys can be scheduled and performed, as necessary.”* Will these schedules also be available for the Division as well?
3. Section 2.1 states: *“The objectives of the characterization program were: To identify the potential and known sources of radioactive contamination in systems on structures, in surface or subsurface soils, and in ground water”* What is the depth and extent of subsurface sampling referenced in this statement?
4. Section 2.2.1 states: *“The HSA for the HNP commenced in 1998, under the direction of the CYAPCO Radiation Protection Department staff.”* The records of the Division and references in the Historical Site Assessment (HSA) document indicate that the HSA began in 1997.
5. Section 2.2.3 discussing radiological surveys performed in support of the initial site characterization states: *“Surveys were performed by the station staff using instrumentation calibrated and maintained in accordance with station procedures utilizing National Institute of Standards and Technology (NIST) traceable calibration sources.”* It has been recently determined that the characterization group which was performing the initial site characterization and offsite remediation work had performed various quality control/ quality assurance errors during the 1997-1998 period. This has led to a management review of work performed by this group regarding offsite activities during this period. Has a review concerning work performed by this group related to the HSA been conducted? If so, what are the results of this review and if not, why hasn't this been performed.
6. Section 2.2.4.1 states: *“Normal operations at HNP resulted in releases of radioactive material through both liquid and gaseous pathways”*. It also states that *“.... Gaseous releases did not result in site contamination and, therefore, do not impact the site relative to decommissioning activities.”* This does not address the discharge canal or a possible future concentration of activity from spills and routine releases. It is unclear from discussion in the LTP how the release of radioactive material from the liquid pathway is addressed. The Division requests clarification on the topic.
7. Section 2.3.3.2 discusses area classification. The area classification for a Class One area is defined differently from the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) with the addition of the phrase *“above the*

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DCGL” and the omission from MARSSIM’s of example 3.) Former burial or disposal sites. Why was this done?

8. Section 2.3.3.2 states: *“The final status survey plan includes a process by which measurements that approach predefined action levels (fractions of the DCGL) are investigated to see if reclassification of an area is necessary.”* What will that fraction or action level be and what is its rationale?
9. Section 2.3.3.2 includes Table 2-6 the MARSSIM Classifications. The Division has the following comments on the following MARSSIM classifications: Survey Area Code 1404, Unit #'s 0005 and 0006 the exterior walls to the Fuel Building are classified as Class 3 areas, however these walls are both above and below areas classified as Class 1 areas. The DEP believes these areas (and others subject to these parameters) therefore should be classified as Class 2 areas. Please provide the rational and basis for this classification.
10. Table 2-6 lists Survey Area Code 3403 Containment Enclosure inside Surfaces is classified as a Class 2 area. This Division believes this area should be classified as a Class 1 area. Please provide justification and basis for this classification.
11. Table 2-6 lists Survey Area Code 9406 South Warehouse as a MARSSIM Class 3 area. The Division believes this should be classified as a Class 2 area, considering the history of this building as a satellite radioactive material storage area. Please provide justification and basis for this classification.
12. Table 2-6 lists Survey Area Code 9532 as being Non-Impacted. What radiological survey data supports this conclusion? Please provide justification and basis for this classification.
13. Table 2-6 lists Survey Area Code 9522 as a Class 2 area. The Division considers this a non-conservative classification based on past contamination events.
14. Table 2-6 lists Survey Area Code 9527 as a Class 2 area. The Division believes this should be classed as a Class 1 area. Please provide justification and basis for this classification.
15. Section 3.4.1 states: *“Following completion of the final status survey and in the absence of any NRC inspection action finding the report deficient, CYAPCO may release buildings for demolition after documentation of results.”* The Division requests concurrence with the NRC in inspection actions and sufficient time to perform confirmatory measurements in this and in all regards to referenced NRC inspection activity in the LTP.

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16. Section 5.3 states: "*Scan measurements will always be made, while fixed measurements and sampling may not be necessary.*" Please give examples of when and why fixed measurements and sampling would not be necessary.
17. Section 5.4.2 states: "*For example, residual radioactivity may be found within a Class 3 survey unit, or residual radioactivity in excess of the DCGLw may be found in a Class 2 unit. In such cases, it may be appropriate to define a new survey unit within the original unit that has a lower (more restrictive) classification. Alternately, the classification of the entire unit can made more restrictive.*" The Division believes that this statement should state that in such cases, it shall be appropriate to define a new survey unit to a more restrictive classification.
18. Section 5.4.6.2 states: "*The appropriate representative mix data for a survey unit of interest will be used to compute gross activity DCGL's at the time of final status survey.*" How will this be performed and will there be time given for regulatory review?
19. Section 5.5.1.1 states: "*The a value will always be set to 0.05 unless prior approval is granted for using a less restrictive value*" The State as one approving authority must concur with this before this is acceptable.
20. Table 5-11 gives traditional scanning coverage requirements for different survey unit classification areas. It is the position of the State that is shall give concurrence and approval prior to use.
21. Section 5.7.1.4 states: "*Like the advanced technologies discussed above, these other methods may in some cases provide sufficient areal coverage so that augmenting the measurement with scanning is not necessary.*" The Division believes that this is a deviation of MARRSIMS and the use of advanced technology in this manner would require prior State approval.
22. Section 5.7.3.2.4 states: "*Based on the historical site assessment, there are no surface water bodies at the HNP site that contain sediments thought to have the potential to contain residual radioactivity at levels near the DCGL's.*" Concentrated material in the discharge canal or concentrated material due to surface runoff or uncontrolled releases into the pond have not been addressed. These areas must be addressed.
23. Table 6-3 RESRAD Contamination Input Parameters is missing the following input parameters: *In Saturated Zone Hydrological Data* a.) Saturated zone capacity b.) Well pumping rate. *Uncontaminated Unsaturated Zone Parameters* a.) Zone B parameter. *Cover and Contaminated Zone Hydrological Data:* a.) Contaminated Zone field capacity. *Ingestion Pathway, Non-Dietary Data:* a.) Ground Water Fractional Usage a) drinking water b.) Live stock water c.) Irrigation water Storage

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*Times before Use* a.) Fish b.) Crustaceans and mollusks c.) Well water d.) Surface water Carbon 14 Data: a.) C-12 concentration in local water b.) C-12 concentration in contaminated soil c.) Fraction of vegetation carbon absorbed in soil d.) Fraction of vegetation carbon absorbed in air e.) Thickness of evasion layer of C-14 in soil f.) C-14 evasion flux rate from soil g.) C-12 evasion flux rate from soil. *Grain fraction in Livestock Feed (balance is hay/fodder)* a.) Beef cattle c.) Cow milk DCF Correction Factor for Gaseous Form of C-14. Why were these input parameters not listed and what are they?

24. It is apparent from reviewing the RESRAD input parameters that data inputs have been chosen from various sources, such as RESRAD defaults, NUREG 5512 and NRC Issue papers. Please show that the chosen parameters support ALARA in comparison to the other alternative parameters.
25. The State expects to review and approve final status survey packages.
26. The State is still evaluating water-modeling issues. Additional comments will be submitted as these portions of the review and evaluation are completed.