

September 27, 2004 (1:07PM)

Before the  
**UNITED STATES**  
**NUCLEAR REGULATORY COMMISSION**

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

**ATOMIC SAFETY AND LICENSING BOARD**

*In the matter of Yankee Atomic Electric Company*  
(Yankee Nuclear Power Station, Rowe, Massachusetts)  
Proposed License Amendment to Incorporate A New  
License Condition Addressing the License Termination  
Plan [LTP] to Document the Date of Approval of the LTP  
01-OLA Provide Criteria to Determine the Need for NRC  
Approval of Changes to the Approved LTP

Docket no. 50-029

ASLBP No. 04-831-

September 27, 2004

**CAN'S REPLY TO THE NRC STAFF ANSWER**

**I. INITIAL MATTERS**

CAN hereby replies, pursuant to 10 CFR §2.309(h)(2), to the NRC Staff answer to CAN's contentions. The objections NRC Staff raise fail to address the substance of the contentions and supporting expert declaration. NRC Staff take issue with CAN's alleged failure to e-file its contentions to the licensee at the outset. That assertion is incorrect. CAN's initial filing was e-filed with the licensee's attorney. Staff also take issue with CAN's failure to serve the Office of General Counsel in its initial filing. CAN followed the new Part 2 rules in this regard. The rules only require initial service upon the Secretary, Rulemakings and Adjudications to

hearingdocket@NRC.gov. CAN's understanding is that the rules are to be taken over subsequent notices unless there is a suspension or change in the rules ordered by the Secretary or presiding officer pursuant to specific rule-based authority. If a different set of rules applies to NRC Staff, the Presiding Officer should inform the parties. Finally, CAN observes that in Contentions 2 through 6, CAN argues that the LTP as submitted does not provide the information at issue in the contentions. Citation to non-existent material is beyond the requirement of 10 CFR 2.309.

## **II. SPECIFIC POINTS IN REPLY TO NRC STAFF ANSWER**

**1. Contention One may be dismissed as it is before the Commission.**

CAN does not dispute that the Commission has jurisdiction of the Motion to Dismiss and that it is not before the Board. CAN does not object to dismissal of Contention One now that Chief Judge Bollwerk has made clear that the matter is before the Commission for resolution.

**2. Contention Two is valid and should be taken up.**

Despite the Staff's objection, CAN's Contention 2 does meet the requirements of 10 CFR Part 2. CAN contends that, "The LTP should not be approved at this time because Yankee Atomic has failed to provide documentation of the source, cause, and plan for remediation of the current

high levels of tritium contamination in the ground water on site, in violation of 10 C.F.R. Part 20, subpart E, §50.52, §50.82.” Looking at the relevant sections of the LTP where any rational human being would expect to find the information, one instead finds contradictory statements. *Compare*, for example the following statements:

The samples collected in 2003 following the draining and emptying of the fuel pool still show an extremely high concentration of tritium (e.g. >45,000 pCi/L in monitoring well MW-107C).<sup>1</sup>

*with*

Tritium concentrations in the wells established in the 1990’s continue to trend downward, as confirmed with the most recent round of sampling.<sup>2</sup>

*and*

Several new, deeper wells were drilled during the summer of 2003. Water in one of these wells had tritium concentrations as high as 48,000 pCi/L, which is significantly greater than in any of the existing wells. This well location is immediately down-gradient of the spent fuel pool, which was drained and decontaminated earlier in the fall of 2003 following spent fuel transfer to dry storage.<sup>3</sup>

In addition the report also states:

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<sup>1</sup> ¶ 6, page 21, Figure 5, and Tables 2 & 6 (YA-REPT-00-004-04) and “Report of Radionuclides in Groundwater- Third Quarter 2003” – Rev. 1 (YA-REPT-00-005-03), Table 2 and Cover Letter dated January 20, 2004 (BYR-2004-005).

<sup>2</sup> Cover Letter dated January 20, 2004 (BYR-2004-005).

<sup>3</sup> *Id.*

Section A-A' (Figure 5) shows that the richest part of the plume has a concentration of about 45,000 pCi/L and is located beneath the SFP/IX Pit complex. The intermediate-depth plume extends downgradient for an undetermined distance[.]<sup>4</sup>

This statement supports Mr. Ross's conclusion that the area in the vicinity and downgradient of the SFP/IX Pit complex has not been fully characterized. A significant question remains, as raised by CAN in Contention Two and not addressed in the LTP--was this high level of contamination overlooked or is it related to a new or recent release connected to work on the fuel pool in 2003? How can Yankee Atomic Electric Company possibly carry out a site cleanup that meets the requirements of 10 CFR 20 and 50.82 unless it provides answers to such questions in the cleanup plan? This kind of utterly incredible omission underlies nearly all of CAN's contentions in this case.

**3. Contention 3 is valid and should be taken up by the Panel.**

The NRC Staff response to Contention 3 completely mischaracterizes CAN's expert Robert Ross's explanation of the deficiencies in the hydrogeologic studies Yankee Atomic Electric Company conducted to support the LTP. Mr. Ross specifically provided examples outlining the deficiencies in the LTP:

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<sup>4</sup> ¶6, page 21(YA-REPT-00-004-04); *see also* 'Remediation – 4.2.3 Surface Water and Ground Water' at 4.3.

Examples of this are highlighted from data collected during the installation of the MW-107 series wells, which identified a sandy layer at 41-45 feet below grade (bg) with “undisturbed ground water” concentrations of tritium at 35,300 pCi/L, and from data collected during the installation of the MW-104 series wells, which identified sandy layers at 115-118, 135-139, and 163.5-175 feet bg with “undisturbed ground water” concentrations of tritium between 4,810 and 8,770 pCi/L. No permanent monitoring wells were installed within any of these zones (see geologic cross-sections A-A’ and D-D’). During the Tele-conference, Mr. David Scott indicated that sufficient water was present within many of the sand lenses identified during soil boring.

Ross Declaration at ¶15, CAN Contentions Exhibit 3. The fact that no permanent monitoring wells were installed within several layers or zones exhibiting elevated tritium readings indicates that the site has not been adequately characterized to warrant a finding that the LTP complies with the requirements of 10 CFR 50.82. In point of fact, Yankee Atomic Electric Company admits that it has no idea of the actual extent of the plume of tritium contamination beneath the Yankee Nuclear Power Station site:

The intermediate depth plume appears to trend northerly, while the ground water flow direction in this interval shown on Figures 11 and 12 is more westerly. The reason for this inconsistency is not known, but may be the result of the relatively few wells completed within the intermediate depth zone.

¶2, YA-REPT-00-004-04 at 21 (emphasis added). Surely, an LTP designed to provide a plan to remediate this contaminated site is, at best, premature, when it fails to describe the nature and extent of the contamination that must

be remediated. Absent adequate characterization of the task to be completed, any projections of cost are also meaningless. The requirements of 10 CFR 50.82 cannot be satisfied by an LTP that does not adequately describe the tasks that must be completed to execute the 'plan'. To permit the characterization of the *extent* of radiological contamination to be part of the plan means that Yankee Atomic is being given permission to undertake the cleanup without the NRC knowing the scope of the project it is permitting. Such an approval would make the LTP for Yankee Rowe an open-ended license not contemplated or authorized under existing NRC regulations. CAN contends that NRC regulations under 10 CFR 50.82 are intended as more than empty words and that, therefore, the LTP should not be approved until the extent and nature of contamination of the three aquifers beneath the site are fully characterized and Yankee Atomic has provided an adequate cleanup plan to match the actual task at hand.

**4. Contentions 4 and 5 are valid and should be taken up.**

CAN submits that contentions 4 and 5 are supported adequately by Mr. Ross's declaration. There is no information to supply from the LTP as it fails to provide the information referenced regarding, in Contention 4, "the vertical extent of subsurface soil contamination beneath facility structures" and, in Contention 5, to "identify and characterize mixed waste in the

ground water on site.” Significantly, neither the NRC Staff nor the licensee answers refute his conclusion by citing to sections of the LTP that provide the information at issue and/or contradict Mr. Ross’s expert opinion. The reason is that such information does not exist. Again, as argued above, the LTP as submitted does not rest upon an adequate characterization of the site and, hence, it is a defective and inadequate blueprint for proper site cleanup as required under 10 CFR 50.82.

**5. Contention 6 is valid and should be taken up by the Panel.**

This Contention is extremely significant. It raises the issue of the adequacy of the methodology Yankee Atomic used to collect the data incorporated into the LTP and relied upon by the LTP. Thus, it puts into question the reliability of much of that data. If the data is unreliable, the conclusions and plans based upon it cannot be relied upon to achieve the objectives of 10 CFR 50.82 and meet the standards of 10 CFR Part 20. This means that public health and safety may not be adequately assured under the LTP and that the LTP as submitted should not be approved. Some examples of these deficiencies follow.

At some point Yankee Atomic changes ground water sampling procedures. The LTP does not make clear when the change occurred and

how Yankee Atomic evaluated data collected using the different procedures in order to account for these changes. Yankee states, for example,

Ground water samples were initially obtained from wells using bailers or a peristaltic sump [pump?]. Where dedicated equipment was not used, care was taken to insure decontamination of samples between wells. Sample acidification and filtration as needed were initially done in the laboratory but eventually these steps were provided in the field.

Ground water data for YNPA Decommissioning---DESD--YR-02-001.

Also, it appears that a different sampling procedure was used during the July and November 2003 sampling events when compared with previous sampling events. Low flow sampling with stabilization of field parameters was employed during the July and November 2003 sampling events as compared to bailing or purging three volumes with a bailer or peristaltic pump. ¶5, YA-REPT-00-004-04 at 18. The following comments apply to the letter designated subsections of Contention 6:

(a) There is no clear indication as to the actual dates ground water samples were collected. It is possible that the samples were collected over the same time frame as the water level measurements. (See comment on section 'c' below).

(b) There is no relevant discussion regarding the correlation between changes in ground water quality and ground water elevations, Table 5 and



Table 6 in YA-REPT-00-004-04. *Compare* “Ground Water Flow” at 15 to 18 *with* “Ground Water Quality” at 19 to 22.

(c) “It should be noted that neither of the two rounds of water level data consists of sets of synchronous measurements made within one or two days. Rather the “July” data were actually measured during the period July 14<sup>th</sup> through September 16<sup>th</sup>, and the “November” data were measured during the period of November 5<sup>th</sup> through December 1<sup>st</sup>, 2003.” ¶4, YA-REPT-00-004-04 at 15.

(g) “No tritium plume maps have been prepared for the bedrock aquifer. One bedrock well, MW-105B, contains detectable levels of tritium (4,850 and 5,220 pCi/L in July and November, respectively).” ¶4, YA-REPT-00-004-04 at 21. Although well MW-105B is located approximately 200 feet north of the SFP/IX Pit complex, the LTP contains no discussion or explanation as to how tritium contamination ended up in the bedrock aquifer. This is a significant omission as the licensee has no way of knowing the extent of the plume—it may, in fact, be much larger than Yankee Atomic assumes that it is—it may even have migrated beyond the site boundaries.

(h) “The intermediate depth plume appears to trend northerly, while the ground water flow direction in this interval shown on Figures 11 and 12 is

more westerly. The reason for this inconsistency is not known, but may be the result of the relatively few wells completed within the intermediate depth zone.” ¶2, YA-REPT-00-004-04 at 21. “The hydraulic conductivities of the sand aquifers within the glaciolacustrine sequence have not been determined.” ¶4, YA-REPT-00-004-04 at 17. Again, this is also a significant omission as the licensee has no way of knowing the extent of the plume—it may, in fact, be much larger than Yankee Atomic assumes that it is—it may even have migrated beyond the site boundaries.

(j) Compare contention with information provided in the “Hydrogeologic Report of 2003 Supplemental Investigation”, YA-REPT-00-004-04 at Figures 15, 16, 17, 18, 19.

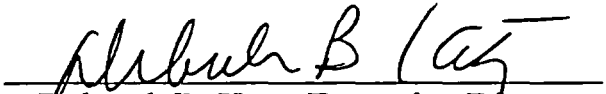
(k) *Id.*

CAN submits that Contention 6 is well supported by the absences, gaps, methodological inconsistencies and sloppy work used to support the LTP that Mr. Ross criticizes in his declaration. The issues raised in Contention 6 are far more serious than the colors used charts--but such poor choices are indicative of sloppy work and bad decision making that can lead to incorrect conclusions and invalidate presuppositions upon which the LTP relies in this area.

## CONCLUSION

The contentions with expert declaration CAN filed with the Board concerning the extensive tritium contamination at the Yankee Rowe site, the inadequacies of the LTP's characterization of the site and the methodological errors and inconsistencies in the work upon which the LTP relies are proper issues for Atomic Safety and Licensing Board review. CAN renews its request that the Board take up these contentions concerning the efficacy of the hydrogeological portions of the Yankee Rowe LTP.

Respectfully submitted this 27th day of September, 2004:

  
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## CERTIFICATE OF SERVICE

I, Deborah Katz, certify that on this 27th day of September, an electronic copy of the above matter was filed upon the parties listed below and docketed with the NRC by sending it to [hearingdocket@nrc.gov](mailto:hearingdocket@nrc.gov), and that a copy will be mailed first class mail to the parties listed below by placing it into the United States Postal Service as pre-paid, First Class mail within the twenty four hours of sending the electronic filing.

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### Courtesy filings

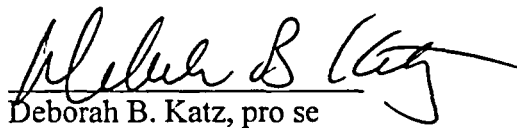
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# CITIZENS AWARENESS NETWORK

September 27, 2004

Secretary  
United States Nuclear Regulatory Commission  
Washington, DC 20555-0001  
ATT: Rulemakings and Adjudications Staff

RE: In the matter of Yankee Atomic Electric Company  
(Yankee Nuclear Power Station, Rowe, Massachusetts)  
Docket no. 50-029

Dear Rulemakings and Adjudications Staff:

Enclosed for filing in the above referenced matter please find the original and two copies of Citizens Awareness Network's "Response to NRC Staff Answer" with attached Certificate of Service. Conformed copies of this filing have also been sent to the service list attached to the pleading. The same material was filed electronically with the parties as described in the certificate of service.

Sincerely,



Deborah B. Katz  
Executive Director  
Citizens Awareness Network

cc: Service List