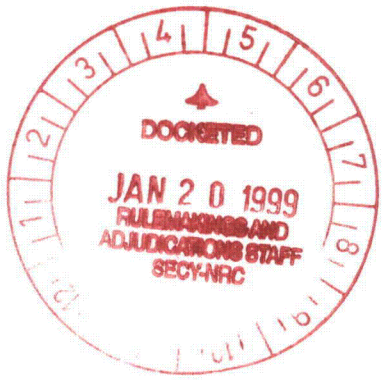
United States of America
Nuclear Regulatory Commission
before the
Atomic Safety and Licensing Board



In the Matter of

YANKEE ATOMIC ELECTRIC COMPANY

(Yankee Nuclear Power Station)

Docket No. 50-029-LA-R

ASLBP No. 98-736-01-LA-R

RESPONSE OF YANKEE ATOMIC ELECTRIC COMPANY TO NECNP PROPOSED CONTENTIONS

Pursuant to 10 C.F.R. § 2.714 and this Board's "Memorandum and Order (Schedules for Remanded Proceeding; Prehearing Conference)" of October 27, 1998, as amended by this Board's "Change in Filing Schedules and Date of Prehearing Conference" of November 30, 1998, Yankee Atomic Electric Company ("Yankee") responds to the proposed contentions of New England Coalition on Nuclear Pollution, Inc. ("NECNP")[1] as follows:

I. Legal Standards

Proposed contentions are governed by 10 C.F.R. § 2.714(b)(2), as amended, which in material part provides as follows:

> "(2) Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide the following information with respect to each contention:
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> "(i) A brief explanation of the bases of the contention.
>
> "(ii) A concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing, together with references to those specific sources and documents of which the petitioner is aware and on which the

[1] "New England Coalition on Nuclear Pollution's Contentions," dated January 2, 1999.

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petitioner intends to rely to establish those facts or expert opinion.

"(iii) Sufficient information (which may include information pursuant to paragraphs (b)(2)(i) and (ii) of this section) to show that a genuine dispute exists with the applicant on a material issue of law or fact. This showing must include references to the specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief. On issues arising under the National Environmental Policy Act, the petitioner shall file contentions based on the applicant's environmental report. The petitioner can amend those contentions or file new contentions if there are data or conclusions in the NRC draft or final environmental impact statement, environmental assessment, or any supplements relating thereto, that differ significantly from the data or conclusions in the applicant's document."

The requirements for contentions were amended in 1989 to provide for a "higher contention admission standard." *Baltimore Gas and Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), LBP-98-26, 48 NRC ___, ___ n.8 (Oct. 16, 1998), *citing Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 248-49 (1996).[2] "A contention may be refused if it does not meet the requirements of section 2.714(b) or if the contention, even if proven, would 'be of no consequence in the proceeding because it would not entitle the petitioner to relief.'" *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), CLI-93-3, 37 NRC 135, 142 (1993).[3]

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[2]The 1989 amendments to 10 C.F.R. § 2.714 were upheld as consistent with § 189a of the Atomic Energy Act in *Union of Concerned Scientists v. NRC*, 920 F.2d 50 (D.C. Cir. 1990).

[3]"The revised rule does, however, overturn the holdings of *Mississippi Power and Light Co.* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 425-26 (1973) and *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 546-49 (1980). The Appeal Board found in those cases that the current language of 10 CFR 2.714 does not require a petitioner to describe facts which would be offered in support of a proposed contention. The new rule will require that a petitioner include in its submission some alleged fact or facts in support of its position

Contentions are necessarily limited to issues that are germane to the application pending before the Board and the decisions that the Commission must make in order to approve it. *E.g., Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC ___, ___ & n.7 (Oct. 23, 1998) (slip opinion at 15 & n.7); *Pacific Gas & Electric Co.* (Stanislaus Nuclear Project, Unit No. 1), ALAB-400, 5 NRC 1175, 1177-78 (1977). With respect to this type of proceeding (approval of a License Termination Plan submitted in advance of a request for termination of the license), the decisions the Commission must make relate to:

> "(1) the licensee's plan for assuring that adequate funds will be available for final site release; (2) radiation release criteria for license termination, and (3) adequacy of the final survey required to verify that these release criteria have been met."

61 Fed. Reg. 39,278 at 39,289 (July 29, 1996); *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC ___, ___ & n.8 (Oct. 23, 1998) (slip opinion at 16 & n.8). With respect to the first of these issues, a contention is not sufficient if it merely challenges the *amount* of a cost estimate; to be admissible, a contention must contend that there is a want of reasonable assurance that the costs will be paid. *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 9 (1996). Moreover, in this particular proceeding, the first of these issues has been foreclosed by prior litigation between the same parties. *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 258-67 (1996).[4]

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sufficient to indicate that a genuine issue of material fact or law exists." 54 Fed. Reg. at 170.

Also overruled by the 1989 amendments to § 2.714 was the "tentative" *dicta* of *Houston Power & Light Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-565, 10 NRC 521, 524 (1979), to the effect that a prospective intervenor had the right to reply to responses to proposed contentions. ALAB-565 was written at a time when, as the Commission acknowledged, § 2.714 did not expressly address how proposed contentions were to be responded to; that subject is expressly addressed now by § 2.714(c), which omits to provide any right of reply.

[4]The decommissioning cost estimate in this proceeding is the same as the one involved in CLI-96-7, and the funding mechanism relied upon here is the same as that relied upon in that case. On the facts before it there, the Commission concluded that the circumstances eliminated "virtually all remaining risk" that the costs would not be paid (43 NRC at 267), a demonstration that transcends the required "reasonable assurance."

Specifically not within the scope of an LTP approval proceeding is any contention relating to "spent fuel (including storage, management and removal),"[5] any contention to the effect that the site release criterion values are to be applied on any basis other than the "average member of the critical group" basis stated in the regulation and defined in NUREG/CR-5512, and any contention that the site release criteria should be other than those specified in 10 C.F.R. § 20.1402 (which "prescribes the pertinent standards for termination of the Yankee Rowe reactor license, and is not subject to challenge or litigation in an adjudication.") *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC ___, ___ n.14 (Oct. 23, 1998).

II. NECNP's Proffered Contentions.

CONTENTION A.

This contention, which addresses six purported flaws in the "site characterization methodology" and "data" contained in the LTP, is stated thus: "YAEC's LTP Does Not Adequately Characterize the Site." It purports to be supported by six "bases." In fact, however, the purported contention is far too vague by itself to be accepted under § 2.714. At the same time, each of the statements of "basis" is independent, in that each purports to state a basis for disapproval of the LTP that is not dependent upon any of the other statements of "basis." For the sake of clarity, therefore, we treat each of the six statements of "basis" as a separate proposed contention.

Statement of the Proposed Contention:

> [A.1]: YAEC's LTP does not adequately characterize the site [because] YAEC has not detailed the distribution of radionuclides in off-site locations and has not surveyed off-site locations to the same precision as on-site locations.

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[5] *CLI-98-21*, slip opinion at 28. Likewise precluded is any contention relating to "the general ISFSI license currently available to Yankee Atomic pursuant to 10 C.F.R. § 72.210" and "any possible future application by Yankee Atomic for a site-specific license to establish and operate an ISFSI pursuant to 10 C.F.R. § 72.40." *Id.*

Yankee's Response:

This contention defines nothing that is worthy or capable of litigation.

At bottom, the contention is (i) that "NECNP contends that YAEC must compare site survey readings to the background radiation levels of neighboring properties in order to arrive at an accurate determination of background radiation" (*NECNP Contentions* at 4), and that (ii) "it has not *yet* determined background levels." (*Id.* at 5.) NECNP does not deny that the LTP—which is a *plan* not a report of completed activity—calls for obtaining background levels. *Id.*, citing LTP at p. 2-4 ("Analyses currently under way will determine the appropriate background values to be subtracted from final status survey results.").[6]

Thus NECNP's contention is that the job isn't finished. For approval of the License Termination *Plan*, the *planned* jobs do not have to have been completed. This contention should be rejected.

Statement of the Proposed Contention:

> [A.2]: YAEC's LTP does not adequately characterize the site [because] YAEC cannot show that on-site locations have direct γ exposure rates of $\leq$5 micro-Roentgens per hour (μR/h) above background.

Yankee's Response:

This contention presents nothing for litigation.

Apparently, NECNP's contention is based on the assumption that the use of a collimated beam "to reduce on-site background radiation levels" (*NECNP Contentions*

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[6]Parts of NECNP's submission on this point are (at best) confusing. For instance, NECNP asserts that the data shown on its page "APP 1" confirms that "Background at YR site has been much higher than the 67 mrem/year background at Williamstown, Massachusetts." *NECNP Contentions* at 4. The data referred to shows "Annual Average Fence Post" TLD readings for on-site locations that average 6.96 μR/h, which translates to *about* 60.99 mrem/yr, or about the same as the reported value for Williamstown. (One converts a exposure rate stated in units of μR/h to a background dose in units of mrem/yr by multiplying by 8.766, the product of multiplying by 8,766 (the number of hours in a year) and dividing by 1,000 (to convert from μR to mR); for the conversion from roentgens to rem, we assume for the moment that the dose is entirely gamma, in which case the conversion factor is approximately 1.0, so that mR $\approx$ mr.)

at 5) is the method by which the LTP proposes to make direct gamma measurements for final survey purposes. This is a plain misreading of the LTP.

A "collimated" detector is used for the purpose of making a spectroscopic analysis of the radionuclides present in a given sample, be it a soil sample, a piece of a building, or something else. Necessarily, the detector used for spectroscopic purposes must be insulated from extraneous sources of radiation, else it will report the composition of the extraneous source, not the sample to be analyzed. NECNP has apparently misinterpreted this language to say (as it does not) that a collimated beam device will be used for general direct radiation scans of the site, which is not the plan (and which would not make sense).[7] Therefore, no "genuine dispute exists with the applicant on a material issue of law or fact" requiring litigation.

Statement of the Proposed Contention:

> [A.3]: YAEC's LTP does not adequately characterize the site [because] YAEC has not shown that direct γ exposure rates of 5 μR/h above background are protective.

Yankee's Response:

This contention must be excluded, because it is nothing other than an attempt to reassert the challenge to the "average member of the critical population" site release criterion that the Commission has already ruled to be impermissible.

As NECNP makes clear, its argument here is that application of the 5 μR/h dose rate "will not maintain the total effective dose equivalent (TEDE) to less than 15 mr/y [sic]" for *some* people who might later reside on the site. *NECNP Contentions* at 5-6. NECNP bolsters this assertion with a number of scenarios, which it denominates "'worst case'" (*id.* at 6), and which it acknowledges are deviations from the "average

[7]A collimated beam device is one that limits the area of detection, so as to isolate the radioactivity from a discrete source, and is the opposite of what one would use to take ambient dose rate measurements.

member of the critical group" residency scenario.[8] NECNP concedes that, as to the average member of the selected critical group, the 5 μR/h is properly calculated.[9]

That NECNP fails to understand the regulatory concept embodied in 10 C.F.R. § 20.1402 is demonstrated by the fact that, per NECNP, the required showing must be that *everyone* in the critical group must receive less than 25 mrem/yr; thus, NECNP asserts that the rule requires that "NRC radiation protection standards" must "equally protect[] children, women, other small persons, home-bound persons, and persons who may be closer to the ground due to a handicapped condition (e.g., wheelchair bound individuals)." *NECNP Contentions* at 7. Yet it should be obvious that if *every* member of the critical group must receive 25 mrem/yr or less, the *average* of their exposures must necessarily be less than 25 mrem/yr. *Pari pasu* by setting a standard based on the *average* exposure to a group of persons, the regulation necessarily contemplates that some members would receive more (and some less). NECNP's contention would thus

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[8]Under NUREG/CR-5849, to apply the site release criterion of 10 C.F.R. § 20.1402 (which the Commission has stated "is not subject to challenge or litigation in an adjudication," CLI-98-21, slip opinion at 25 n.14), one first defines a "critical group." *See* 10 C.F.R. § 20.1003 ("the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances"). Here, consistent with that guidance, the LTP defines the "critical group" to be based on the "residential scenario," which is the most constraining of the scenarios set forth in NUREG/CR-5512. "The average member of the critical group in the residential scenario is represented by an individual who lives on the site, ingests groundwater produced from beneath the site, and ingests food grown on site. The pathways considered include direct exposure to external radiation, inhalation of resuspended soil and indoor dust, and ingestion of contaminated food, water and soil." NUREG-1500, at pp. F-2 & F-3. For this scenario, per hour dose rates can be converted into Total Effective Dose Equivalents (TEDEs).

NECNP's proposed contention does not attack the selection of the "critical group" nor the exposure model for the "average" member. Rather, it contends that for purposes of calculating a per-hour dose rate, one must use hypothetical persons with personal circumstances that render them atypically susceptible to radiation. It is precisely this approach that, in CLI-98-21, the Commission ruled to be inconsistent with its regulations and, therefore, inadmissible.

[9]"NUREG-1500 and 5512 scenarios assume an adult male is away 24.7% of the time . . . . A dose rate of 5 μR/h greater than background is only protective under a residential scenario in which an adult male spends 55% of the time indoors, 20% outdoors and 1% gardening. This restricted scenario for direct exposure level, together with other pathways, will maintain TEDE below 15 mrem/year for a hypothetical adult male, according to NUREG-1500, using the DandD software." *NECNP Contentions* at 6.

require that 10 C.F.R. § 20.1402 be re-written, something that is prohibited in this adjudicatory proceeding.[10]

NECNP apparently seeks to evade the Commission's prior ruling by disclaiming that its contention is based on "worst" case scenarios. Prescinding from whether that is true (particularly if one accept's NECNP's assertion that *everyone* must be treated equally), NECNP seems not to understand *why* the Commission rejected this assertion previously. The Commission rejected the use of anything but the "average" member of the critical group not because the particular example employed might be the "worst" case, but because the particular example employed deviated from the "average." It is not sufficient, under the Commission's ruling in CLI-98-21 (or its regulation in 10 C.F.R. § 20.1402) to move back from the 100% worst case to the 95% worst case (or the 75% worst case or even the 51% worst case), for in each case the fatal flaw lies in the rejection of the use of the "average."[11]

There is, however, an even more fundamental problem with this contention. The TEDE that forms the basis of the site release criterion relates only to the dose that is caused by plant-related radioactive materials. It includes both a direct radiation ("shine dose") component and a component derived from other pathways. For the average

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[10]In fact, it should be clear that if the site release criterion were written in terms of a "most exposed member of the public," as (for instance) used in 10 C.F.R. § 20.1301, then the applicable value would not be 25 mrem/yr but rather 100 mrem/yr (as it is in § 20.1301). Indeed, NECNP's own calculations show that the "worst" case exposure (43-87 mrem/yr) is below that standard, which demonstrates that the Commission's objectives in promulgating § 20.1402 have been achieved.

[11]Though it need not detain this Board for long (since this Board has no jurisdiction to hold Commission regulations invalid on any grounds, including constitutional grounds), NECNP's assertions that the use of an "average" value unconstitutionally discriminates against some people is silly. As the Commission made clear in promulgating § 20.1402, the value selected (25 mrem/yr) is way below the actual objective (reasonable assurance of less than 100 mrem/yr, the accepted standard for human health exposure to low-level radiation). Indeed, if one assumes that NECNP is correct that women or some other subset of humans always receives a higher dose given a fixed source term, then the discrimination NECNP complains about would be true at whatever level the site release criterion were fixed. This is true because the "discrimination" of which NECNP complains involves the differing rates at which different humans react to a given source term, and it demonstrates that, ultimately, the "discrimination" of which NECNP complains is something ordained by God in creating people who differ from one another. *That* discrimination, if such it be, is not amenable to either the dictates of the United States Constitution or the orders of this Board.

member of the critical group, the dose from all pathways is summed and must be less than 15 mrem/yr. However, the "shine dose" component is *not* derived from the gross direct readings to which NECNP refers, which readings do not exclude the contribution of non-plant-related radionuclides in the surface soil. The "shine dose" component of the TEDE is necessarily derived, rather, by evaluating the radionuclide composition of the soil samples themselves, identifying those that are plant-related, and then calculating the "shine dose" they contribute. NUREG/CR-5512 at p. 5.5-2 through 5.5-4. The direct reading requirement, which derives from SDMP Action Plan criteria (*see* 10 C.F.R. § 20.1401), is merely a screen to identify areas of possibly elevated contamination that may require further evaluation for nature and source of radioactive materials. Given the naturally occurring disparities in such things as uranium distribution in soils, one could identify an area of elevated direct readings that, in fact, is unrelated to YNPS operations and, therefore, does not contribute to the plant-related TEDE at all. In a sentence, the 15 mrem/yr TEDE and the 5 μR/h are separate limits (not separate statements of the same limit). This contention, therefore, is based on a comparison of things that cannot be compared.

Contention A.3, therefore, must be excluded.

Statement of the Proposed Contention:

> [A.4]: YAEC's LTP does not adequately characterize the site [because] YAEC has not shown that direct γ exposure rates at 1 meter above ground are protective.

Yankee's Response:

This contention is a restatement of a portion of Contention A.3 and must likewise be rejected. In essence, it contends that the governing standard for determining site release must be the Total Effective Dose Equivalent to the Average (or Most Exposed) *child* member of the critical group, which is not the standard that the Commission has promulgated.

Moreover, as is true in the case of Contention A.3, NECNP proceeds on the false premise that the direct readings of γ exposure rates at 1 meter above ground are the

basis of the TEDE calculations, which is not the case. The TEDE, which includes the direct γ component, is derived by application of the appropriate residential/use model and accounts for all exposures from all pathways.

Statement of the Proposed Contention:

> [A.5]: YAEC's LTP does not adequately characterize the site [because] YAEC has not characterized the full extent of on-site subsurface contamination.

Yankee's Response:

Yankee agrees that an admissible contention would be:

> The LTP should not be approved because it does not propose to characterize the extent of on-site sub-surface contaminants to the extent required by 10 C.F.R. § 50.82.

Yankee does *not* agree that so much of this contention as purports to contend that "and, therefore, [Yankee] cannot accurately determine the full costs of remediating the site" is an admissible issue. *NECNP Contentions* at 9. For the reasons set forth at 23, *infra* with respect to Contention G.1, NECNP has not met the standards for pleading a cost-estimate contention.[12]

Statement of the Proposed Contention:

> [A.6]: YAEC's LTP does not adequately characterize the site [because] YAEC has not detected all α-emitters likely to be present at the Yankee Rowe site.

Yankee's Response:

Yankee agrees that the following would be an admissible contention:

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[12]In acknowledging that there is an admissible contention in NECNP's materials on this point, Yankee should not be read as conceding the accuracy of NECNP's assertions that "[t]he computer model DandD . . . requires as input a total radioactive inventory" or that "[t]he guidance values [Yankee] is employing assume no residual radioactivity below 15 cm in soil."

> The LTP should not be approved because it does not call for a survey of α-emitting radionuclides.[13]

Statement of the Proposed Contention:

> [A.7]: YAEC's LTP does not adequately characterize the site [because] YAEC's designation of affected versus non-affected areas of the site is arbitrary.

Yankee's Response:

One way seriously to impair an effort like that for which the LTP plans is to waste time and resources searching for needles where they aren't to be found. The LTP thus explains in detail how the site is divided into gross classifications for survey purposes, how the gross classifications are tested, and how reclassification may be triggered based on survey results. *LTP* at A-17 through A-21. Whether one agrees or disagrees, the process is far from arbitrary.

To the contrary, the only "basis" on which NECNP premises this contention is that Yankee at one point elected initially to reclassify one area based on a finding and then upon review observed that the finding did not meet the criteria for reclassification. *NECNP Contentions* at 11. This does not show arbitrary behavior; if anything, it shows consistent application of plan criteria tempered with tendencies toward conservatism.

NECNP has not adequately supported the proposition that "a genuine dispute exists with the applicant on a material issue of law or fact. This showing must include references to the specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute." 10 C.F.R. § 2.714(b)(2)(iii).[14]

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[13]It is difficult, however, to comprehend anyone's enthusiasm for such a contention, since the LTP commits to the NUREG/CR-5849 methodology, which in turn is based upon an assessment of all of the plant-related radionuclides remaining on the site capable of affecting the ultimate calculation of TEDE.

[14]It should be observed that in an effort to sustain this contention, NECNP relies at one point upon rank speculation, to wit: that "major areas of the site *may* be contaminated above regulatory limits." *NECNP Contentions* at 11. There is (and NECNP has offered) no factual support for this speculation.

Statement of the Proposed Contention:

> [A.8]: YAEC's LTP does not adequately characterize the site [because] YAEC has averaged out high soil concentrations of radiation.

Yankee's Response:

Yankee agrees that a valid contention would be:

> The LTP should not be approved because the Final Status Survey Plan is obliged to, but does not, employ the sample methodology depicted in Fig. 4-4 of NUREG/CR-5849.

That said, however, such a contention should not be admitted here, since § 4.3.3 of the Survey Plan *does* follow the NUREG/CR-5849 methodology, precisely. NECNP seems to have overlooked this provision.[15]

Statement of the Proposed Contention:

> [A.9]: YAEC's LTP does not adequately characterize the site [because] YAEC's scan surveys are consistently biased toward low readings.

Yankee's Response:

This contention appears to be that a correction factor was necessary to calibrate the Geiger-Muëller detector used by Yankee in the field to the Pressurized Ion Detector device employed in the laboratory (as assumed to be accurate). It should be excluded because it fails the "so what?" test.[16] NECNP does *not* contend that the GM detector

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[15]In this context, NECNP seems to have been confused by Inspection Report 50-29/98-03. As originally proposed, in the event of a suspected high concentration in soil as a result of the scan, Yankee had proposed that one of the four (per 100 m^2 square) soil samples be located over the suspected high concentration. The Staff inspector noted that, while this approach was commendable, in that it tended to make the sampling more rigorous, it might be deemed to deviate from the "systematic" aspect of NUREG/CR-5849, which could be interpreted as requiring that the location of all four samples within each square be the same from square to square. As a result of this observation, Yankee amended the plan to its present form, which leaves the four samples located as indicated in NUREG/CR-5849 Fig. 4-4 and adds a fifth sample at the indication location (which is more samples than is required and tends to bias the results upward, not downward).

[16]*I.e.*, "A contention may be refused if . . . the contention, even if proven, would 'be of no consequence in the proceeding because it would not entitle the petitioner to relief.'" *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), CLI-93-3, 37 NRC 135, 142 (1993).

has not been properly calibrated to the PIC detector, and if that is so, the reasons why calibration are required are immaterial.[17]

Statement of the Proposed Contention:

> [A.10]: YAEC's LTP does not adequately characterize the site [because] YAEC has not evaluated scanning sensitivity for field survey instruments.

Yankee's Response:

Yankee agrees that a valid contention might be:

> The LTP should not be approved because it does not require a determination of the minimum detectable concentrations for survey instruments used in its implementation.

However, NECNP does not so contend, and the LTP does include this requirement, which is described at length in *LTP*, *FSSP* §§ 4.6.1, 4.6.2, and Table 4.2. The fact (if fact it be) that this requirement has not been performed *yet* states nothing for litigation, since the validity of the *plan* is unaffected by the fact that it has not yet been implemented. Likewise, any contention to the effect that the requirements of the *plan* were not met in performing the survey is one that becomes ripe—logically and legally—only at the time of an application for termination of license and is therefore not an admissible contention in this proceeding.[18]

CONTENTION B.

Like "Contention A," NECNP's proposed contention B, which addresses four purported flaws in the methods by which Yankee intends to manage the on-site storage of spent nuclear fuel pending shipment to DOE, is likewise far too vague by itself to be accepted under § 2.714. At the same time, each of the statements of "basis" is independent, in that each purports to state a basis for disapproval of the LTP that is

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[17]For what it is worth, the "discrepancy" to which NECNP adverts lies in the differing response tendencies of the two types of detectors to sources of different energy levels.

[18]*CLI-98-21*, slip opinion at 28: "[I]f the Board does grant CAN and NECNP a hearing . . . [i]t will consider neither . . . any future application by Yankee Atomic to terminate its Part 50 license."

not dependent upon any of the other statements of "basis." For the sake of clarity, therefore, we treat each of the four statements of "basis" as a separate proposed contention.

That said, however, the four contentions subsumed under the number "B" share the common fatal failure that each addresses on-site spent fuel management, which the Commission has held is not a topic that is within the scope of this proceeding, and therefore Contention B, or the four contentions within Contention B, must all be excluded.

Statement of the Proposed Contention:

> [B.1]: YAEC's LTP contains unreviewed safety questions [because] YAEC must consider the following unreviewed safety issue[]: Heavy objects falling into the spent fuel pool.

Yankee's Response:

Approval of the LTP by the Commission will not authorize any movement of heavy loads over the spent fuel pool that are not already authorized. As the Commission has already acknowledged, Yankee already possesses license authority to store spent fuel in the spent fuel pool, to dismantle the spent fuel pool as outlined in the approved Decommissioning Plan, to transfer spent fuel to casks for on-site storage, and to move heavy loads over the spent fuel pool. CLI-98-21, slip opinion at 16-17. With respect to heavy loads in particular, a notice of opportunity for hearing on a proposed amendment to the YNPS Technical Specifications was published more than a year ago. *See* 62 Fed. Reg. 54,866, 54,879 (October 22, 1997). NECNP apparently elected to let the time for filing requests for hearing and petitions to intervene on that amendment expire without seeking to intervene, and the amendment was thereafter issued. 63 Fed. Reg. 35,986, 36,002 (June 17, 1998). As a matter of law, no further analysis of heavy loads is required and, *a fortiori*, no such analysis is required in connection with approval of an LTP.

One need only add that NECNP appears not to comprehend the significance of 10 C.F.R. § 50.59, which is cited apparently in support of the proposition that certain

analyses are required in this proceeding. Section 50.59 does not define the scope of a proceeding; rather, section 50.59 provides authority for a licensee, without seeking an amendment of his license, to make certain changes in the design of the facility. The LTP proposes no changes in the design of the facility and, to the extent that the activities described in the Decommissioning Plan previously and twice approved by the Commission for YNPS do involve changes in design, that Plan has already been approved (twice).

As the Commission carefully delineated in remanding this matter to this Board, the only issues that are within the scope of this proceeding are those relating to the decisions that the Commission must make: "regarding (1) the licensee's plan for assuring that adequate funds will be available for final site release; (2) radiation release criteria for license termination, (3) adequacy of the final survey required to verify that these release criteria have been met." CLI-98-21, slip opinion at 16 n.8, *quoting* 61 Fed. Reg. at 39,298.

This proposed contention must be excluded.[19]

Statement of the Proposed Contention:

> [B.2]: YAEC's LTP contains unreviewed safety questions [because] YAEC must consider the following unreviewed safety issue[]: A tornado strike damaging the spent fuel pool.

Yankee's Response:

The design of the YNPS spent fuel pool has previously been approved. Modifications (certain and potential) to that pool in connection with the dismantlement of systems at YNPS have previously been approved. No change in design of the spent fuel pool is (or could be) proposed by the LTP, and no change in the design of the

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[19]This Board should decline NECNP's invitation to "make a specific finding [sic] about when NECNP . . . will be permitted to address the issue of the YAEC's LTP [sic] proposed use of dry storage . . . ." There are two reasons. First, what is requested would amount to an advisory opinion, which is beyond the jurisdiction of a Licensing Board convened to rule upon the admissibility of contentions and the resolution of any admitted contentions. Second, the Commission has already responded to this lament and pointed out how NECNP's view of the law is erroneous. If NECNP believes the Commission to be in error, this Board is not the forum that can grant NECNP relief.

spent fuel pool is (or could be) authorized by the approval of the LTP. This issue is not within the scope of the issues noticed for this proceeding and must be excluded.

Statement of the Proposed Contention:

> [B.3]: YAEC's LTP contains unreviewed safety questions [because] YAEC must consider the following unreviewed safety issue[]: Sabotage of the spent fuel pool.

Yankee's Response:

The design of the YNPS spent fuel pool has previously been approved. Modifications (certain and potential) to that pool in connection with the dismantlement of systems at YNPS have previously been approved. No change in design of the spent fuel pool is (or could be) proposed by the LTP, and no change in the design of the spent fuel pool is (or could be) approved by the Commission by approving the LTP. This issue is not within the scope of the issues noticed for this proceeding and must be excluded.

Statement of the Proposed Contention:

> [B.4]: YAEC's LTP contains unreviewed safety questions [because] YAEC must consider the following unreviewed safety issue[]: Downsizing of qualified nuclear personnel . . . [to respond to] radiation-type accidents.

Yankee's Response:

The size and composition of the YNPS forces required to respond to emergencies is fixed by the YNPS "Defueled Emergency Plan," which was approved by the Commission on November 5, 1992. 57 Fed. Reg. 52,799 (Nov. 5, 1992). There is no proposal in the LTP to alter the DEP, and approval of the LTP will not (and could not) alter the provisions of the DEP. This issue, therefore, in not within the scope of these proceedings.

CONTENTION C.

Statement of the Proposed Contention:

> Contrary to the requirement of 10 CFR 50.82(a)(9)(ii), YAEC's site remediation plans are based upon inadequate data and will not protect public health and safety.

Yankee's Response:

This "contention" should be excluded.

The stated basis for this contention is that, as NECNP apparently reads the LTP, Yankee proposes no evaluation of soil contamination below the top 15 centimeters of the soil:

> "[Yankee] only plans to conduct *surface soil* sampling to a depth of 15 cm. . . . As [Yankee] will not be testing below 15 cm during *site characterization* . . . ."

NECNP Contentions at 19.

Note how NECNP has equated "surface soil sampling" and "site characterization." In fact, as the plan makes clear, surface soil sampling is only one aspect of site characterization. It seems that NECNP is confused.

Surface-level contamination is evaluated because of its potential for direct radiation impact on residents. Investigations focus on the top 15 cm, *not* because of an assumption that no contamination lies deeper, but because contamination that is spilled on the surface rarely penetrates beyond 15 cm. Sub-surface contaminants, on the other hand, present a potential TEDE impact on residents through other pathways, and are otherwise accounted for in the survey methodology.

Thus, while the *surface* samples are limited to the top 15 cm, it is *not* true that "[Yankee] only plans to conduct . . . [all] *soil* sampling to a depth of 15 cm, and NECNP can (and does) cite nothing to support such a conclusion.

CONTENTION D.

NECNP proposes two distinct contentions under the heading of "Contention D."

As with the several contentions comprising "Contention B," however, each of the contentions in under the rubric "Contention D" deal with the on-site storage or off-site shipment of spent nuclear fuel, and each is therefore categorically beyond the scope of this proceeding.

Statement of the Proposed Contention:

> [D.1]: Contrary to the requirements of 10 CFR 50.82(a)(9)(ii) and 50.82(a)(3), YAEC cannot specify when irradiated fuel [IF], all structures, and contamination will be removed from the site, and when a final site survey will be conducted. Until these details are finalized, the NRC cannot approve the LTP or the Final Site Survey Plan.

Yankee's Response:

As the Commission has previously made clear, the LTP does not involve issues concerning spent fuel management, for however long that takes. Nor, as the Commission has also made clear, is Yankee required to withhold filing an LTP until spent fuel has been moved off-site (or even until it is known for certain when DOE will begin fulfilling its obligations); the Commission pointed out (as NECNP appears to overlook) that an LTP and a request for license termination are two different things. CLI-98-21, slip opinion at 5-6.

NECNP attempts to relate the question of DOE-default to the obligation to complete decommissioning within 60 years. However, the question of whether the licensee's decommissioning plans are sufficiently alacritous is one that is properly raised in connection with the Decommissioning Plan, which in this case has already been approved (in the face of the very same uncertainties regarding DOE and the very same estimates for planning purposes). To whatever extent this issue may once have had relevance, it is now foreclosed and is not, in any event, related to the *plan* for site survey and remediation.

Statement of the Proposed Contention:

> [D.2]: Contrary to the requirements of 10 CFR 50.82(a)(3) and (a)(9)(ii), YAEC has not specified the type of IF storage casks it proposes to use, whether these casks have been licensed, and how the IF will be moved

> from these storage casks to the proposed high-level waste repository. Until YAEC finalizes these details, the NRC cannot approve the plan.

Yankee's Response:

This contention is not admissible. Plainly put, Yankee is not required in an LTP to "specif[y] the type of IF storage casks it proposes to use, whether these casks have been licensed, and how the IF will be moved from these storage casks to the proposed high-level waste repository." Spent fuel management and disposal are not within the scope of an LTP approval.

CONTENTION E.

"Contention E" is, in fact, two distinct contentions.

Statement of the Proposed Contention:

> [E.1]: Contrary to NRC requirements, YAEC has not shown that the LTP is adequate and will protect the health and safety of the public in that: (1) the Guideline Values are not protective of full-time residents or children [because] YAEC's LTP is designed only to maintain *doses to an adult male* below 15 mrem per year; doses to children will likely be higher.

Yankee's Response:

This is a restatement of NECNP's Contentions A.1, A.3 and A.4, and is inadmissible for the same reasons.

Statement of the Proposed Contention:

> [E.2]: Contrary to NRC requirements, YAEC has not shown that the LTP is adequate and will protect the health and safety of the public in that: (2) the soil concentration release criteria are not supported by YAEC's analysis and are, in any case, too high [because] YAEC's Guideline Values are not supported and, in any case, are too high.

Yankee's Response:

Contention E.2 has two distinct sub-parts.

It is perfectly true that NUREG-1500 does not contain a guideline value for Ag^{108m}. On the face of the LTP, however, it is manifestly *not* true that "[Yankee's] basis for adopting the soil guidance value for silver-108m does not appear in the LTP" (*NECNP Contentions* at 27); to the contrary, the LTP clearly states that this value was derived using the RESRAD code. *LTP* Table 2-3, n.2. The RESRAD code employed by Yankee (version 5.7) does contain a value for this isotope.[20] The bottom line, however, is that NECNP does *not* contend that Yankee incorrectly calculated this value, and therefore there is nothing to litigate.

The second sub-part of this contention—that the Final Status Survey Plan fails to take the sum of the ratios of guideline values—would be admissible if it were not on its face contrary to what the Survey Plan states. As is clearly depicted on p. A-10, Eq. 3.1, the Survey Plan follows exactly the methodology that NECNP contends is required.

CONTENTION F.

Statement of the Proposed Contention:

> Contrary to NRC regulations, the YAEC LTP does not show that the "residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA)."

Yankee's Response:

This contention has two bases: (i) that Yankee has overstated the cost of soil removal and (ii) that Yankee has understated the amount of exposure to be saved. Yankee agrees that this would be an admissible contention, if properly supported, but says that it should not be admitted here, for two reasons.

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[20]The current version of the program, version 5.82, also contains a value for silver-108m. NECNP claims to be using "version 5.782," which is anomalous, since the version numbering system is believed to be limited to two digits after the decimal, and Yankee has been unable to locate a version 5.782 to see why NECNP was unable to locate this value. In any event, NECNP apparently acknowledges not having checked the version that the LTP refers to. *NECNP Contentions* at 27 n.40.

With respect to the cost of sending contaminated soil, NECNP seems to be the victim of an obvious math error caused by its failure to distinguish between units of "per cubic *meter*" and "per cubic *foot*." This may be readily demonstrated.

NECNP contends that Yankee employed a value of $3,030 per cubic meter, presumably based on Barnwell rates.

NECNP then contends that this rate "would be lower by a factor of 30 if [Yankee's] calculations were based upon using the Envirocare facility in Utah."

Dividing $3,030 per cubic *meter* by 30 results in a rate of $101 per cubic *meter*.

One cubic meter contains 35.31 cubic feet.[21]

A disposal rate of $101 per cubic meter would thus equate to a disposal rate of $2.86 per cubic foot. This Board may take official notice that $3/ft^3 is orders of magnitude below any available rate.[22] Indeed, we expect NECNP and its expert will readily recognize as much once its attention has been called to the point.[23]

NECNP's other assertion, that Yankee omitted from its ALARA calculation the radiological contribution to TEDE of Ag^{108m}, Ce^{134} and α-emitters and therefore understated the dose savings, would be valid *if* NECNP had any basis for asserting that any of these radionuclides (or any radionuclides other than Co^{60} and Cs^{137}) *make* any meaningful contribution to dose. In fact, they do not.

Finally, NECNP seems to be confused as to the term "mean life." The mean life of an isotope is the period of time that captures *all* of the dose impact of the isotope

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[21]One meter equals 3.28 feet; one square meter equals 10.76 square feet; one cubic meter equals 35.31 cubic feet.

[22]Consider, for instance, that over ten years ago experts were arguing about whether a representative value for disposal of low-level waste should be $60 or $90 per cubic foot. *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-88-10, 28 NRC 573, 586 (1988).

[23]In point of fact, Yankee's value of $3,030/m^3 was based on a rate quoted *by Envirocare* of $86/ft^3.

when multiplied by the dose rate at time zero.[24] The value employed by Yankee, 26 years, is the average of the mean lives of the only two radionuclides that contribute to the dose at Yankee. Extending the calculation any further than the mean life would not change the result of the calculation, and NECNP has proffered no basis for contending that it would.

One other observation must be made about this (or any other) ALARA contention insofar as it might relate to the site release criteria, namely that in setting the 25 mrem/yr. TEDE to the average member of the critical group criterion, the Commission has already factored ALARA into account:

> "[T]he Generic Environmental Impact Statement for the license termination rule finds that, for soil, doses that meet the 25 millirem per year dose limit are ALARA. *See* NUREG-1496, Vol. 1, § 6.2 and Table 6.1 (discussing, inter alia, costs of cleaning up soil to 25 millirem or below at a reference power reactor). In these cases, additional demonstration of compliance with ALARA may not be necessary."

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[24] *LTP* at p. 4-7: "Radiological decay is taken into account through the use of a mean life for a given contamination radionuclide distribution. The mean life represents the period of exposure at the initial dose rate that will account for all potential exposure until the radioactivity has been eliminated by decay. With a mean life of approximately 8 years, Co-60 is responsible for approximately 75% of the dose at YNPS. However, in order to calculate a mean life for this ALARA analysis, it is conservative to use a radionuclide distribution which assumes that 50% of the dose results from Co-60 and 50% results from the longer-lived Cs-137 radionuclide. This hypothetical distribution has a mean life of 26 years and bounds the actual radionuclide distributions at YNPS, which decay at faster rates and have shorter mean lives." It is well-known in the health physics area, that the mean life of a radionuclide is 1.44 times its half life. $Dose_{total}$ = $DoseRate_{t=0}$ × Half-Life / 0.693.

It may be observed that NECNP adds a rather silly complaint that does not bear any relationship to the LTP. NECNP contends: "Finally, YAEC assumes only ½ person would be affected by remedial soil removal . . . ." *NECNP Contentions* at 29. Someone must have been tired. The LTP's ALARA analysis assumes that the entire population on the released site would be affected, the density of which population it sets (conservatively) at 20 people per acre. This population *density* works out to 0.5 persons per 100 square meters, which is the unit of remediation on which the costs are based. To say that Yankee has assumed that only a half a person "would be affected" is silly. (Note that at 20 persons per acre, one would expect to find five 4-person households per acre, or (in single family terms) house lots averaging 8,000 square feet of land. This is denser than such closely sub-urban communities as Arlington or Brookline, and is therefore manifestly conservative for Franklin County.)

CLI-98-21, slip opinion at 25 n.15.[25] Here, where Yankee is proposing a site release criterion that is 40% *lower* than the already ALARA'd value, compliance with the ALARA requirement may be presumed absent a truly extraordinary showing to the contrary.

CONTENTION G.

NECNP presents two contentions regarding the updated decommissioning cost estimate.

Statement of the Proposed Contention:

> [G.1] Contrary to NRC regulations, YAEC's LTP underestimates the full cost of irradiated fuel [IF] management and license termination, resulting in an inadequate estimation of remaining decommissioning costs as required under 10 CFR 50.82(a)(9)(ii) [because] YEAC has underestimated the time required to remove all IF from the site [and], therefore, underestimated the full cost of irradiated fuel management.

Yankee's Response:

This attempt to back-door into this LTP proceeding the spent fuel issues that the Commission has ruled excluded fails, in part, because no contention regarding a cost estimate is sufficient if it merely alleges that the cost estimate is uncertain or even erroneous. Rather, to be admissible, a contention must contend that there is a want

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[25] *See also* "Radiological Criteria for License Termination," 62 Fed. Reg. 39,058, 39,066 (July 21, 1997), concluding (in part on the basis of a Generic Environmental Impact Statement) that:

> "To clarify the concept of ALARA, the regulatory guidance to be prepared will refer to the existing requirements of §§ 20.1003 and 20.1101 where ALARA is defined to include considerations of the state of technology, economics of improvement in relation to the state of technology, economics of improvements in relation to benefits to the public health and safety, and other societal and socio-economic considerations. Although preparation of guidance is in a preliminary stage, it is anticipated that this guidance would likely indicate that ALARA during decommissioning should include typical good practice efforts (e.g., floor and wall washing, removal of readily removable radioactivity in buildings or in soil areas), as well as ALARA analyses for buildings to levels less than 0.25 mSv/y (25 mrem/y) based on the number of individuals projected to be occupying the building, but that an ALARA analysis below 0.25 mSv/y (25 mrem/y) for soil removal would not need to be done."

of reasonable assurance that the costs will be paid. *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 9 (1996). Moreover, in this particular proceeding, the first of these issues has been foreclosed by prior litigation between the same parties. *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 258-67 (1996).[26]

Statement of the Proposed Contention:

> [G.2] Contrary to NRC regulations, YAEC's LTP underestimates the full cost of irradiated fuel [IF] management and license termination, resulting in an inadequate estimation of remaining decommissioning costs as required under 10 CFR 50.82(a)(9)(ii) [because] YAEC has not estimated the full extent of subsurface contamination on the site.

Yankee's Response:

This, too, is a cost estimate contention and it, too, is inadmissible for the same reasons. *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 258-67 (1996).

CONTENTION H.

Once again, NECNP has amalgamated five contentions.

Statement of the Proposed Contention:

> [H.1]: Under existing NRC regulations, YAEC's plans for the final status survey are inadequate and will not protect the health and safety of the public [because] YAEC's proposed final status survey would not determine the full extent of on-site subsurface contamination.

Yankee's Response:

This is a restatement of proposed Contention C and should be treated in the same way.

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[26]As noted above (note 4, *supra*), the Commission has already concluded that the funding mechanism for the decommissioning of YNPS eliminates "virtually all remaining risk" that the costs would not be paid.

Statement of the Proposed Contention:

> [H.2]: Under existing NRC regulations, YAEC's plans for the final status survey are inadequate and will not protect the health and safety of the public [because] YAEC will not have surveyed all α-emitters likely to be present at the Yankee Rowe site.

Yankee's Response:

This is a restatement of proposed Contention A.6 and should be treated in the same way.

Statement of the Proposed Contention:

> [H.3]: Under existing NRC regulations, YAEC's plans for the final status survey are inadequate and will not protect the health and safety of the public [because] YAEC's methodology for determining Guideline Values is vague and in any case, leads to Guideline Values that are too high.

Yankee's Response:

This is a restatement of proposed Contention E.2 and should be treated in the same way.

Statement of the Proposed Contention:

> [H.4]: Under existing NRC regulations, YAEC's plans for the final status survey are inadequate and will not protect the health and safety of the public [because] [t]he resultant TEDE exposures will be much greater than 15 mr/y.

Yankee's Response:

This is a restatement of NECNP's Contentions A.1, A.3 and A.4, and is inadmissible for the same reasons.

Statement of the Proposed Contention:

> [H.5]: Under existing NRC regulations, YAEC's plans for the final status survey are inadequate and will not protect the health and safety of the public [because] [t]he ALARA analysis is completely *ad hoc* and vague.

Yankee's Response:

This is a restatement of proposed Contention F and should be treated in the same way.

Conclusion.

For the foregoing reasons, the Board should admit Contentions A.5 and A.6 (restated as set forth above at 10), and should exclude the balance of NECNP's proffered contentions.

Respectfully submitted,

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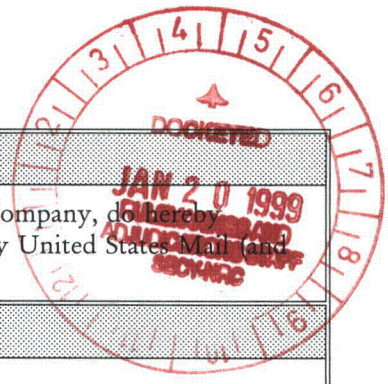
Dated: January 20, 1999.



CERTIFICATE OF SERVICE

I, Robert K. Gad III, one of the attorneys for Yankee Atomic Electric Company, do hereby certify that on January 20, 1999, I served the within pleading in this matter by United States Mail (and also where indicated by an asterisk, by facsimile transmission) as follows:

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