

# YANKEE ATOMIC ELECTRIC COMPANY

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*61FR57926*  
*Nov. 8, 1996*

(2)

February 27, 1997  
FYC 97-001

United States Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Attention: Chief, Rules Review and Directives Branch  
Division of Freedom of Information and Publication Services  
Mail Stop T-6 D59

Subject: Draft NUREG-1567 Standard Review Plan for Spent Fuel Dry Storage Facilities,  
dated October 1996 (61 FR 57926)

Dear Sir or Madam:

Yankee Atomic Electric Company (Yankee) appreciates the opportunity to provide comments on the subject draft Standard Review Plan (SRP) for spent fuel dry storage facilities. Yankee is the owner of the Yankee Nuclear Power Station in Rowe, Massachusetts and provides engineering and licensing services to nuclear power plants in New England. Because the Yankee station in Rowe is permanently shutdown and is in the process of being decommissioned, Yankee is very interested in the development of any NRC guidance documents associated with the process for interim storage of spent nuclear fuel and high-level radioactive waste pending its removal by the Department of Energy.

The subject SRP for spent fuel dry storage facilities (FSRP) is intended to provide guidance to the NRC staff for performing safety reviews of license applications for installations for dry storage of nuclear materials under Title 10 CFR Part 72. The SRP is also intended to ensure the quality and uniformity of the staff reviews and defines a basis for evaluating modifications of the review process in the future. Yankee is generally supportive of the staff's efforts associated with the subject draft SRP. However, we wish to take this opportunity to offer general and specific comments as found in the attachment to this letter.

Yankee previously commented on the draft Standard Review Plan for Dry Cask Storage Systems (NUREG - 1536) by letter dated June 17, 1996. Comments provided in that letter are not repeated in the attachment to this letter as the Federal Register notice (61FR57926) stated that comments common to both SRPs would be considered and incorporated in both NUREGs.

*ISRP-11 Guides & Manuals*  
*XID & R-Security License*

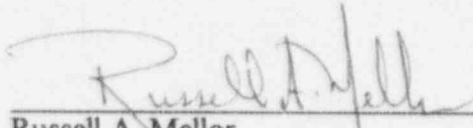
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*Yankee Letter to NRC*  
*February 27, 1997*  
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Should you have any questions regarding our comments, please do not hesitate to contact me at 508-568-2203.

Sincerely,  
YANKEE ATOMIC ELECTRIC COMPANY

  
\_\_\_\_\_  
Russell A. Mellor  
Manager of Operations / Decommissioning Manager

c: USNRC, Document Control Desk  
M. Fairtile, NRC, NRR  
J. White, NRC, Region I

## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 1

Summary of Issue:

Review process schedule for new and innovative approaches.

Chapter 1 Section 1.4 Paragraph \_\_\_\_\_

Type of Issue: Please select one of the following categories:

Suggestion \_\_\_\_\_/ Addition X \_\_\_\_\_/ Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_/ Clarification \_\_\_\_\_

Comment:

The Acceptance Criteria in Subsection 4 in each chapter on new or different solutions and approaches suggests that new approaches will result in delays in the review process, and thereby discourages submittals which are innovative. Yankee raised this issue when commenting on NUREG - 1536.

Basis for Comment:

Instead of suggesting there will be delays in the review process associated with new approaches, NRC should encourage new and innovative approaches and indicate that they will do their best to minimize any additional time requirements for review.

Suggested Revision/Replacement Language

Suggest adding the following statement to subsection 4, of the "Acceptance Criteria" section in each chapter: Although NRC encourages new and innovative approaches and recognizes that reviews of such approaches may take longer, a commitment will be made to utilize our best efforts to minimize any additional time required for review.

## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 2

### Summary of Issue:

Meteorological measurement program criteria / regulatory guidance.

Chapter 2 Section 2.4.3.3 Paragraph \_\_\_\_\_

Type of Issue: Please select one of the following categories:

Suggestion X / Addition \_\_\_\_\_ / Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_ / Clarification \_\_\_\_\_

### Comment:

This section's reference to RG 1.23 (Onsite Meteorological Program) should be replaced by reference to RG 3.63 (Onsite Meteorological Measurement Program for Uranium Recovery Facilities - Data Acquisition and Reporting) as a source of criteria for an acceptable onsite meteorological measurements program.

### Basis for Comment:

The primary purpose of the onsite meteorological measurements program is to provide local data for use in estimating offsite concentrations of airborne effluents. RG 1.23 is from Division 1 (Power Reactors) of the regulatory guide series and reflects the typical effluent release pathway configurations (e.g., elevated stacks and vents) and level of risk for power reactors. However, the level of risk to public health and safety from an ISFSI or MRS will be much lower than that from a power reactor and the effluent release pathway configurations will typically result in ground-level releases (pursuant to RG 1.111 and RG 1.145). Consequently, RG 3.63 provides meteorological measurements program criteria which better reflect the ISFSI/MRS effluent release configurations and lower level of risk.

### Suggested Revision/Replacement Language

In the last sentence, replace the reference to R.G. 1.23 with R.G. 3.63.

## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 3

### Summary of Issue:

Onsite meteorological measurement program guidance criteria.

Chapter 2 Section 2.5.3.3 Paragraph \_\_\_\_\_

Type of Issue: Please select one of the following categories:

Suggestion X / Addition \_\_\_\_\_ / Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_ / Clarification \_\_\_\_\_

### Comment:

This section's references to NUREG-0800 Section 2.3.3 (III) for a detailed discussion on evaluating the onsite meteorological measurement program should be deleted.

### Basis for Comment:

NUREG-0800 provides guidance for safety reviews of licence applications for power reactors and Section 2.3.3 of NUREG-0800 extensively references RG 1.23 as a source of criteria for an acceptable onsite meteorological measurements program. However, the level of risk to public health and safety from an ISFSI or MRS is much lower than that from a power reactor and RG 3.63 provides meteorological measurements program criteria which better reflect the ISFSI/MRS effluent release configurations and lower level of risk.

### Suggested Revision/Replacement Language

Delete the sentence, "Section 2.3.3 (III) of NUREG-0800 provides a detailed discussion for each of these review areas."

## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 4

### Summary of Issue:

Vibratory ground motion and response spectra guidance.

Chapter 2 Section 2.5.6.2 Paragraph \_\_\_\_\_

Type of Issue: Please select one of the following categories:

Suggestion \_\_\_\_\_/ Addition X/ Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_/ Clarification \_\_\_\_\_

### Comment:

Section 2.5.6.2 requires that the ground motion be described using an appropriate response spectra of 0.25g if three criteria are met or the procedure in Appendix A of 10CFR100 is to be used. Site specific ground motion acceptable to NRC was developed as part of the Systematic Evaluation Program (SEP). This ground motion should be acceptable for use for spent fuel dry storage facilities.

### Basis for Comment:

The site specific ground motion and response spectra developed for SEP was subject to exhaustive review by NRC and was accepted for use in the analysis and design of safety related structures. This same ground motion and response spectra should be acceptable for the analysis and design of spent fuel dry storage facilities located at the SEP facilities.

### Suggested Revision/Replacement Language

Add the following to the third paragraph: Additionally, the ground motion and response spectra developed for the Systematic Evaluation Program (SEP) and accepted by NRC for use in the analysis and design of safety related structures is acceptable for the analysis and design of spent fuel dry storage facilities.

## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 5

Summary of Issue:

Waste material ALARA

Chapter 6 Section 6.5.2 Paragraph \_\_\_\_\_

Type of Issue: Please select one of the following categories:

Suggestion X / Addition \_\_\_\_\_ / Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_ / Clarification \_\_\_\_\_

Comment:

Item (2) page 6-7 states, "Wastes -- materials that are of sufficient hazard that they require special care before being finally disposed. The amount of such wastes should be ALARA". We agree with the concept that the amount of waste materials generated should be minimized, however, the term ALARA is subjective in that there are no regulatory limits that define what constitutes ALARA as it applies to solid materials.

Basis for Comment:

10CFR50, Appendix I does define ALARA as a set of numerical values for liquid and gaseous effluents, but not for solid waste. It is not clear as to what "ALARA" should refer to, i.e. the reduction of the volume of solid material, or curie content of the waste. Typically, the volume of waste is reduced since disposal costs have historically been on a volume basis. However, as the volume goes down, the concentration of radioactivity goes up. This increase in concentration could in some cases increase the worker dose in handling higher specific activity waste. If ALARA applies primarily to dose reduction, then volume reduction maybe a competing need. In practice, economic factors associated with the cost of waste disposal have proven to be very effective in reducing utility solid waste volumes over the last decade. There is no bases upon which to judge what methods/systems are equivalent to an "ALARA" approach for handling solid waste materials.

Suggested Revision/Replacement Language

The subject statement should be deleted or specifically clarified as to intent.



## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 6

### Summary of Issue:

Estimated onsite collective dose assessment acceptance criteria.

Chapter 9 Section 9.4.4 and 9.5.4 Paragraph \_\_\_\_\_

Type of Issue: Please select one of the following categories:

Suggestion X / Addition \_\_\_\_\_ / Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_ / Clarification \_\_\_\_\_

### Comment:

These sections (pages 9-24, 9-31) imply that the NRC requires an assessment of collective dose (person-rem) resulting from ISFSI operations to onsite individuals. The acceptance criteria for this analysis is not clear since the regulations that govern radiation exposure do not stipulate a limit on collective dose.

### Basis for Comment:

The requirement for this type of assessment, as it may relate to members of the public, should be deleted since compliance with the numerical individual dose limits stated in NRC regulations, including ALARA in facility design and operation, minimize the total dose to members of the public (who would be expected to be primarily offsite by design of the required control area boundaries) to very low levels. Section 9.4.4 also identifies that the NRC finds acceptable the guidance for onsite collective dose assessment found in Regulatory Guides: RG 1.25: "Assumptions Used For Evaluating The Potential Radiological Consequences of a Fuel Handling Accident In The Fuel Handling And Storage Facility For Boiling And Pressurized Water Reactors"; RG 1.109: "Calculation Of Annual Doses To Man From Routine Releases Of Reactor Effluents For The Purposes Of Evaluating Compliance with 10CFR Part 50, Appendix I"; and, RG 1.111: "Methods for Estimating Atmospheric Transport And Dispersion Of Gaseous Effluents To Routine Releases From Light Water Cooled Reactors." These references are inappropriate since they refer to the calculation of doses to individuals or population groups located offsite, and not to occupationally exposed workers at a dry spent fuel storage facility.

### Suggested Revision/Replacement Language

Delete the references to Regulatory Guides 1.25, 1.109, and 1.111 from this section.



## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 7

Summary of Issue:

Initiating event criteria.

Chapter 12 Section 12.4.1 Paragraph 3

Type of Issue: Please select one of the following categories:

Suggestion X / Addition \_\_\_\_\_ / Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_ / Clarification \_\_\_\_\_

Comment:

The statement that "The NRC does not apply a frequency criterion to determination if safety criteria must be met for a possible accident." should be deleted.

Basis for Comment:

The subsequent sentence states, "Credibility" is the determinant...'. "Credibility" inherently implies that an event is sufficiently likely to warrant evaluation. Thus potential frequency of occurrence is applied by the NRC.

Suggested Revision/Replacement Language

Delete the subject sentence.

## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 8

Summary of Issue:

Chapter 12 grammatical error.

Chapter 12 Section 12.5.1 Paragraph \_\_\_\_\_

Type of Issue: Please select one of the following categories:

Suggestion \_\_\_\_\_/ Addition \_\_\_\_\_/ Grammatical Error X

Inconsistency \_\_\_\_\_/ Clarification \_\_\_\_\_

Comment:

There is a typographical error on page 12-7, the last 2 lines on page "... reliance on human infallibility..."

Basis for Comment:

Grammatical correction.

Suggested Revision/Replacement Language

Change "infallibility" to "fallibility" in subject sentence.

## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 9

### Summary of Issue:

Quality Assurance program guidance.

Chapter 15 Section 15.1 Paragraph \_\_\_\_\_

Type of Issue: Please select one of the following categories:

Suggestion \_\_\_\_\_/ Addition \_\_\_\_\_/ Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_/ Clarification X

### Comment:

This section is vastly different from the Quality Assurance Section included in NUREG-1536.

### Basis for Comment:

NUREG-1536 simply states that the review of the applicant's QA Program is conducted independently from the SAR and is not included in the Safety Evaluation Report. NUREG-1567 contains the entire QA Section requirements as documented in 10 CFR 72, Subpart G and states, in Section 15.2, that the reviewer should examine the QA Program in terms of the 18 criteria defined in 10 CFR 72, Subpart G. The results of the review and evaluation are recorded as findings in the Safety Evaluation Report. This is clearly different than the approach taken in NUREG-1536.

### Suggested Revision/Replacement Language

If the intent is to make the two NUREGs similar, then one or the other should be revised to reflect similar QA Requirements. As the NRC is currently auditing QA programs outside of the SAR submittal process, it is suggested that this document be changed to reflect the NUREG-1536 QA section.

## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 10

Summary of Issue:

QA program Acceptance Criteria - Code Data Reports / Code Symbol Stamping.

Chapter 15 Section 15.4 Paragraph \_\_\_\_\_

Type of Issue: Please select one of the following categories:

Suggestion X / Addition \_\_\_\_\_ / Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_ / Clarification \_\_\_\_\_

Comment:

This section describes acceptance positions used by the NRC to evaluate the applicants QA Program. While most of the criteria is standard and straightforward, Page 15-39, Section 15.4.17, regarding disposition of non-permanent records, (a) references a Code Data Report being signed or a Code Symbol Stamp being affixed. Current ASME III requirements for stamping cannot be met for these types of vessels.

Basis for Comment:

NUPACK, Division III, Proposed ASME Code Titled, "Containment Systems for Spent Fuel and High Level Waste Transportation Packaging" will be issued for trial use and comment in the second quarter of 1997. This document will delineate requirements for these vessels. Current ASME III requirements for full penetration welds and pressure testing cannot be met for these types of vessels.

Suggested Revision/Replacement Language

Remove references to Code Reports and Stamping.

## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 11

### Summary of Issue:

Radiological release criteria guidance criteria.

Chapter 16 Section 16.4.1 Paragraph 2

Type of Issue: Please select one of the following categories:

Suggestion X / Addition \_\_\_\_\_ / Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_ / Clarification \_\_\_\_\_

### Comment:

The last sentence in the second paragraph should be structured in a way that acknowledges applicability of radiological release criteria that are anticipated to be approved as part of an on-going 10 CFR Part 20 rulemaking.

### Basis for Comment:

Such an acknowledgment will preclude the need for a later revision to this section.

### Suggested Revision/Replacement Language

"Criteria acceptable to NRC Staff for unrestricted release of site is found in R. 1.86. Upon approval of the 10 CFR Part 20 rulemaking that addresses radiological release criteria, the new rule will provide the acceptable criteria."

## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 12

Summary of Issue:

Decommissioning cost estimate requirement.

Chapter 16 Section 16.5.2.1 Paragraph 8

Type of Issue: Please select one of the following categories:

Suggestion X / Addition \_\_\_\_\_ / Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_ / Clarification \_\_\_\_\_

Comment:

In the eighth paragraph, the requirement for the staff to perform an independent cost estimate is excessive.

Basis for Comment:

Review of the decommissioning cost estimate should involve a process similar to that of decommissioning cost estimate reviews for Part 50 Licenses. That is, the Staff should, on a sampling basis, verify the accuracy of the estimate, based on knowledge and experience gained to date on similar dry cask storage facilities.

Suggested Revision/Replacement Language

Replace the eighth paragraph with the following: "Staff should perform an assessment on a sampling basis, of the cost estimate. The assessment should take into consideration cost experience available to NRC for other nuclear facilities."



## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 13

### Summary of Issue:

Decommissioning plan completeness.

Chapter 17 Section 17.1.5 Paragraph \_\_\_\_\_

Type of Issue: Please select one of the following categories:

Suggestion X / Addition \_\_\_\_\_ / Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_ / Clarification \_\_\_\_\_

### Comment:

The Statement on acceptability of the applicant's proposed plan should be as follows: ... "the staff safety evaluation," ... etc. This type of information is generally addressed or contained in other documents. NRC leaves itself open to the suggestion that they are overlooking these issues.

### Basis for Comment:

NRC's statement can be misinterpreted that the decommissioning plan relative to the ISFSI is incomplete.

### Suggested Revision/Replacement Language

State that this type of information is generally required of licensees and is available in other documents.

## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 13

Summary of Issue:

Decommissioning plan completeness.

Chapter 17 Section 17.1.5 Paragraph \_\_\_\_\_

Type of Issue: Please select one of the following categories:

Suggestion X / Addition \_\_\_\_\_ / Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_ / Clarification \_\_\_\_\_

Comment:

The Statement on acceptability of the applicant's proposed plan should be as follows: ... "the staff safety evaluation," ... etc. This type of information is generally addressed or contained in other documents. NRC leaves itself open to the suggestion that they are overlooking these issues.

Basis for Comment:

NRC's statement can be misinterpreted that the decommissioning plan relative to the ISFSI is incomplete.

Suggested Revision/Replacement Language

State that this type of information is generally required of licensees and is available in other documents.

## Comment Sheet

Commentator Yankee Atomic Electric Company Issue Number 14

Summary of Issue:

Technical report addition.

Chapter 18 Section 18.1 Paragraph \_\_\_\_\_

Type of Issue: Please select one of the following categories:

Suggestion \_\_\_\_\_/ Addition X/ Grammatical Error \_\_\_\_\_

Inconsistency \_\_\_\_\_/ Clarification \_\_\_\_\_

Comment:

The following EPRI/PNL Report on stainless steel clad fuel should be included: Cunningham, M. E., et al., "Evaluation of Expected Behavior of LWR Stainless Steel Clad Fuel in Long Term Dry Storage." Prepared by Battelle Pacific Northwest Laboratories, EPRI-TR-106440, 3290-10.

Basis for Comment:

Although the work was financed by EPRI, the same PNL personnel/expertise who performed the studies on Zirconium clad fuel, did the work on stainless steel clad fuel.

Suggested Revision/Replacement Language

Include in Section 18 under Pacific Northwest Laboratory (PNL), Cunningham, M. E., et al., "Evaluation of Expected Behavior of LWR Stainless Steel Clad Fuel in Long Term Dry Storage." Prepared by Battelle Pacific Northwest Laboratories, EPRI-TR-106440, 3290-10.