

## TRIP REPORT

To: Maine Yankee Power Station (MYPS)  
 Licensee: Maine Yankee Atomic Power Co.  
 (MYAPC)

Date of Trip: 7/19-20/82

Project; 504-5506-01

FRC Project No. 04097

Generic Issue: Radiological  
 Effluent Technical Specification

Attendees:

<u>FRC</u>	<u>NRC</u>	<u>MYPS &amp; MYAPC</u>
A. Cassell	C. Nelson	M. Strum
S. Pandey	K. Heitner	P. Littlefield
	C. Nichols	D. Sturniolo
	P. Swetland	P. Radsky
		S. Evans
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		J. Garrity
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The purpose of this site visit to Maine Yankee Power Station was to discuss with the Licensee FRC's initial review of the Licensee's submittal of Radiological Effluent Technical Specifications (RETS) and Offsite Dose Calculation Manual (ODCM).

It was the intention of FRC to identify and resolve the technical differences and missing information that had been encountered during the review of the Licensee's initial submissions, RETS - submittal dated 15 March 1979 and ODCM submittal dated 14 May 1979, as compared to the model RETS, NUREG-0472, Revision 2, dated Feb. 1980. Through the direction of the USNRC, Environmental Treatment System Branch (ETSB) the reviewer was directed to use the latest revision of the model RETS, NUREG-0472, Revision 3, dated June 4, 1982, as the guidelines for making comparison.

Summary of Major Issues

The major issues discussed during the site visit are highlighted in the following sections; 1) Liquid Effluent Instrumentation, 2) Gaseous Effluent Instrumentation, 3) Liquid Concentration, 4) Liquid and Gaseous Tank Limitations, 5) Gaseous Dose Rate, 6) Explosive Gas Monitoring, 7) Liquid and Gaseous Dose Design Objectives, 3) Sampling

and Analysis Program, 9) Environmental Monitoring Program, 10) Radwaste Treatment System, 11) Bases for Specification, 12) Plant Design Features, 13) Administrative Controls, and 14) Offsite Dose Calculation Manual. Each of the fourteen (14) sections mentioned in this trip report reflects the resolutions and agreements reached with the Licensee as well as the (OPEN ITEMS) which at present have not been resolved.

The Licensee has agreed to send to the Commission a copy of their RETS which will be marked up to reflect the agreements reached at the site visit, and have committed to a 60 day turn around period. The marked-up resubmittal should be forth coming by 20 September 1982.

- 1) Liquid Effluent Instrumentation - (Sec. 3.3.3.9)(Model RETS)
  - o Licensee will back-fit the Turbine Bldg. effluent pathway with a composite sampler and address it in Table 3.25-1 of their RETS
  - o Licensee does not have a composite sampler on the steam generator blowdown effluent line, but has agreed to a grab sample program based on a primary to secondary leakage indicating excessive radiation levels.
  - o Licensee has agreed to using the statement "at all times" for applicability. This will apply to the LCO and Tables throughout the RETS, where required.
  - o No Open Items in this section
- 2) Gaseous Effluent Monitoring - (Sec. 3.3.3.10)
  - o Licensee stated that the waste gas hold-up system is not explosive proof and they will address in their resubmittal.
  - o No Open Items in this section.
- 3) Liquid Concentration - (Sec. 3.11.1.1)
  - o No Open Items in this section
- 4) Liquid and Gaseous Tank Limitations - (3.11.1.4, 3.11.2.6)
  - o All outside permanent liquid hold-up tanks are dyked and have over flow capabilities. They are not required to be listed in this section.
  - o Licensee does not wish to include temporary tanks in their specifications. They will discuss this item and give justification for their position.
  - o Licensee has demonstrated the method for selecting curie limits for gas storage tanks.
  - o Licensee will provide alternative requirements for surveillance requirements for curie limits in gas storage tanks and will give justification for the alternate surveillance.

- o No Open Items in these sections.
- 5) Gaseous Dose Rate - (Sec. 3.11.2.1)
- o Licensee stated that the instantaneous dose rate specification of the model RETS is too restrictive. Operational history of the plant has shown that during certain events (such as containment purge) instantaneous releases will exceed the model RETS objectives. However, the Licensee stated that it can be assured that the annual average will still be well below the 10CFR Part 20 requirements. Licensee can propose an alternate method suitable to a plant specific design, but a justification is required (OPEN ITEM)
- 6) Explosive Gas Monitoring - (Sec. 3.11.2.5B)
- o Licensee does not have a system to meet this specification, but has agreed to provide specifications to control oxygen concentration in gaseous effluent system. (OPEN ITEM) Licensee desires to have results of NRC studies, when available, covering the monitoring system and instrumentation for explosive mixtures in PWRs.
- 7) Liquid and Gaseous Dose Design Objectives - (Secs. 3.11.1.2, 3.11.2.2, 3.11.2.3)
- o Licensee stated that they will change to the RM 50-2 Design Objectives for liquid, gaseous- noble and radioiodine and particulate dose.
  - o Licensee will address the surveillance requirements for these sections according to the model RETS.
  - o For the Section 3.11.4, Total Dose, The Licensee will address but, will justify the reason for deleting the reference to uranium fuel cycle, which the Licensee took exception to. Licensee stated that they will address the Total Dose in accordance with their position. (OPEN ITEM)
- 8) Sampling and Analysis Program - (Sec. Table 4.11-1, 4.11-2)
- o Licensee will not include Fe-55 as a reportable isotope in their Liquid Sampling and Analysis Table 3.16-1. Until the NRC studies are conclusive, the Licensee feels that they should not be required to perform the analysis of this isotope (OPEN ITEM). Justification will be provided in their resubmittal.
  - o Licensee will correct Gaseous Sampling and Analysis Program in accordance with model RETS.
- 9) Environmental Monitoring Program - (Sec. 3.12.1)
- o Licensee has agreed to use the NRC Branch position as covered in the latest revision of NUREG-0472, in order to correct their Table 4.8-1.

- o Licensee will address the missing portions of the Land Use Census and Interlaboratory Comparison Program in accordance with the recommended guidelines of NUREG-0472, Rev. 3 draft.
  - o No Open Items in these sections
- 10) Radwaste Treatment System - (Sec. 3.11.1.3, 3.11.2.4)
- o The Licensee does not accept the values as stated in the Liquid and Gaseous Radwaste Treatment System. They feel that the value of 1/48th the Annual Dose design objective is just as arbitrary as "the cumulative dose in unrestricted areas does not exceed 50% of their Annual Dose design objectives" and see no need to change their values if they are maintaining ALARA. (OPEN ITEM)
  - o The Licensee does not want the Process Control Program included in the RETS. They would prefer that this should appear in their FSAR which would tend to give them some degree of flexibility. (OPEN ITEM)
- 11) Bases for All Major Items - (Sec. 3/4.3.3.9 thru 3/4.12.3)
- o Licensee wants to change the bases for Total Dose to reflect the deletion of any statement related to Uranium Fuel Cycle. (OPEN ITEM)
- 12) Plant Design Features - (Sec. 5.0)
- o The Licensee has agreed to review the site specific maps and correct them according to the requested information.
  - o No Open Items in this section.
- 13) Administrative Control - (Sec.6.0)
- o Licensee will address the Quality Assurance Program auditing requirements.
  - o The administrative control for both the PC and ODCM will remain (OPEN ITEMS) until a decision has been reached where the items are to be placed.
- 14) Offsite Dose Calculation Manual
- o The sections of the ODCM which were reviewed are:
    - 1) Liquid Effluent Monitoring Set-Point, 2) Liquid Effluent Concentration, 3) Liquid Effluent Dose Calculations, 4) Projected Doses for Liquid Effluents, Gaseous Effluent Monitoring Set-Point, 6) Gaseous Effluent Dose Rate Calculations for Noble Gases, Radioiodine and particulates, and other radionuclides, 7) Gaseous Effluent Dose Calculations for Noble gases, radioiodine, particulates and other radionuclides, 8) Projected Doses for Gaseous Effluent, 9) Sample Location Table for both Liquid and Gaseous Effluents, and 10) Release Pathway Diagrams for Liquid and Gaseous Effluents.

- o A concise synopsis of the ODCM review and discussion with the Licensee at the station site indicates that the Licensee has addressed all the above items or has agreed to address the stated questions in the comparison report, with the exception of items (4) and (8), projected doses for liquid and gaseous effluents respectively. (OPEN ITEMS)
  
- o The Licensee states that when the RM 50-2 design objectives re used in their RETS, projected doses would no longer be required. The Licensee has also stated that they do not want the ODCM in the RETS requirements. They would prefer that the information be placed in their FSAR which would have to be reviewed annually for any changes to the ODCM. They also stated that this would allow a greater flexibility in using operational procedures in the ODCM.

July 30, 1982

NRC STAFF POSITIONS ON ISSUES RELATED TO  
THE MAINE YANKEE RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS

1. MYAPC does not want a limit on the curie content of temporary liquid radwaste tanks.

Acceptable alternatives to 3.11.1.4 are:

- a. a specification prohibiting use of temporary liquid radwaste tanks without prior approval;
- b. a specification requiring that temporary liquid radwaste tanks be surrounded by liners, dikes or walls capable of holding the contents; or
- c. an analysis showing that the failure of a liquid radwaste tank containing unlimited activity would not cause concentrations in an unrestricted area exceeding the limits of 10 CFR 20, Appendix B, Table II, Column 2.

2. MYAPC does not want the dose rate from gaseous effluents limited to 500 mrem/yr.

Generally, the 3.11.2.1 limitation is essential to meeting the provisions of 10 CFR 50.36a for keeping releases "within the limits specified in § 20.106", and for exerting "best efforts to keep levels of radioactive materials in effluents as low as reasonably achievable". An appropriate alternate specification could be accepted for a specific plant if it were shown that the dose rate limit of 3.11.2.1 would be impracticable or would constitute an undue burden on that specific plant.

3. MYAPC does not want to refer to "uranium fuel cycle sources" in the limitation on total dose.

Alternatives to the wording of 3.11.4 and 6.9.1.9 may be acceptable if the alternatives provide for controlling and reporting doses from direct radiation as well as doses from effluents. However, MYAPC should note that the requirements for limiting and reporting total doses from uranium fuel cycle sources exist independently of the specifications. These requirements are imposed by regulations 40 CFR 190, 10 CFR 20.106 and 10 CFR 20.405. The principal purposes of the specifications are to establish accepted provisions for surveillance, for reporting and for obtaining a variance (if one should ever be needed).

4. MYAPC does not want to use 1/48 of the annual dose design objectives in one month as "trigger" levels for operation of the effluent treatment systems.

Acceptable alternatives to 3.11.1.3 and 3.11.2.4 are:

- a. specifications requiring that the effluent treatment systems be used to treat all releases;
- b. specifications establishing other "trigger" levels for the use of the effluent treatment systems, provided that the alternate trigger levels are justified by a cost/benefit analysis; or
- c. specifications requiring that the effluent treatment systems be used as necessary to meet the RM 50-2 criteria, including limiting annual releases to 1 curie of I-131 in gaseous effluents and 5 curies (excluding tritium and dissolved noble gases) in liquid effluents.

5. MYAPC wants the ODCM and the PCP to be parts of the FSAR, rather than separate documents supporting the RETS.

Making the ODCM and PCP parts of the FSAR is acceptable provided:

- a. the initial ODCM is reviewed and approved by the NRC as part of the RETS update effort;
- b. the technical specifications (3.11.1.1, 3.11.3, etc.) include commitments to follow the ODCM and PCP;
- c. the technical specifications require appropriate internal review (as per 6.13 and 6.14) prior to implementing changes; and
- d. the technical specifications require inclusion in the next Semi-annual Radioactive Effluent Release Report of brief descriptions of changes to the ODCM or PCP.