

UNITED STATES NUCLEAR REGULATORY COMMISSION REGION I 475 ALLENDALE ROAD KING OF PRUSSIA, PENNSYLVANIA 19406-1415

February 1, 2005

Docket No. 05000309 License No. DPR-36 ISFSI Docket No. 07200030

Michael J. Meisner, Chief Nuclear Officer Maine Yankee Atomic Power Company 321 Old Ferry Road Wiscasset, ME 04578-4922

# SUBJECT: INTEGRATED INSPECTION NO. 05000309/2004002

Dear Mr. Meisner:

On December 31, 2004, we completed an integrated inspection at your Maine Yankee reactor facility of activities authorized by the above listed NRC license. We discussed our findings with you, James Connell, William Henries and others via a telephone conference on January 27, 2005. The enclosed report presents the results of this inspection.

During this inspection period, we inspected your operations and maintenance, security and safeguards, and plant support programs through selective examinations of procedures and representative records, interviews with personnel, and observations by the inspectors. We consider the programs to be implemented appropriately.

In accordance with Section 2.390 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations (CFR), a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <a href="http://www.nrc.gov/reading-rm/adams.html">http://www.nrc.gov/reading-rm/adams.html</a>. Please note that on October 25, 2004, the NRC suspended public access to ADAMS, and initiated an additional security review of publicly available documents to ensure that potentially sensitive information is removed from the ADAMS database accessible through the NRC's web site. Interested members of the public may obtain copies of documents that remain unavailable for review and/or copying by contacting the NRC Public Document Room is located at NRC Headquarters in Rockville, MD, and can be contacted at 800-397-4209 or 301-415-4737 or pdr@nrc.gov.

We appreciate your cooperation with us during this inspection.

Sincerely,

## /**RA**/

Ronald R. Bellamy, Chief Decommissioning Branch Division of Nuclear Materials Safety

Mr. M. Meisner

2. ORISE Report, "Final Letter Report - In-process Inspection Survey Results for the Containment Building Interior, Survey Units 1 Through 4, Maine Yankee Atomic Power Company, Wiscasset, Maine", October 20, 2004

CC:

- T. Feigenbaum, President, Decommissioning
- M. Thomas, Vice President and Chief Financial Officer
- W. Henries, Manager Engineering
- R. Benner, Director, Decommissioning
- T. Williamson, Director, Nuclear Safety & Regulatory Affairs
- J. M. Block, Attorney at Law
- E. Howes, Director, Public and Government Affairs
- J. Fay, Esquire, Corporate Counsel
- J. Niles, ISFSI Manager
- P. Dostie, State Nuclear Safety Inspector
- P. Brann, Assistant Attorney General

First Selectman of Wiscasset

M. Kilkelly, State Senator, Chair - Community Advisory Panel

Maine State Planning Officer - Nuclear Safety Advisor

State of Maine, SLO Designee

State Planning Officer - Executive Department

Friends of the Coast

Mr. M. Meisner

Distribution: S. Collins, RA/J. Wiggins, ORA P. Lohaus, OSTP **DNMS Director, RI DNMS Deputy Director, RI** R. Bellamy, RI D. Holody, RI R. Prince, RI M. Roberts, RI R. Tadesse, OEDO C. Miller, OEDO D. Gillen, NMSS C. Craig, NMSS J. Buckley, NMSS B. Watson, NMSS J. Monninger, NMSS T. Madden, OCA D. Vito, ORA D. Screnci, PAO N. Sheehan, PAO Inspection Program Branch, NRR (IPAS)

SISP Review Complete: Rbellamy 2/1/05 DOCUMENT NAME: G:\D&LB\MY\my0402.wpd After declaring this document "An Official Agency Record" it <u>will</u> be released to the Public. To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RI:DNMS	RI:DNMS	RI:DNMS			
NAME	Mroberts RRB1	Rbellamy RRB1	Gpangburn F	MC		
DATE	2/1/05	2/1/05	1/31/05			

OFFICIAL RECORD COPY

# U.S. NUCLEAR REGULATORY COMMISSION REGION I

#### INSPECTION REPORT

- Inspection No. 05000309/2004002
- Docket Nos. 05000309 & 07200030
- License No. DPR-36
- Licensee: Maine Yankee Atomic Power Company
- Location: 321 Old Ferry Road Wiscasset, ME 04578-4922
- Inspection Dates: May 24, 2004 December 31, 2004
- Inspectors: Mark C. Roberts, Senior Health Physicist Decommissioning Branch Division of Nuclear Materials Safety (DNMS), Region I

John Buckley, Maine Yankee Project Manager Division of Waste Management and Environmental Protection Office of Nuclear Materials Safety and Safeguards (NMSS)

Bruce Watson, Health Physicist Division of Waste Management and Environmental Protection NMSS

Approved By: Ronald R. Bellamy, Chief Decommissioning Branch, DNMS, Region I

#### EXECUTIVE SUMMARY

#### Maine Yankee Atomic Power Company NRC Inspection Report No. 05000309/2004002

This integrated inspection included aspects of licensee operations and maintenance, engineering, security and safeguards, and plant support programs. The report covers approximately a seven-month period of announced inspections by one regional inspector, two NMSS inspectors, and three NRC contractors from the Oak Ridge Institute for Science and Education's (ORISE) Environmental Survey and Site Assessment Program (ESSAP).

#### **Operations & Maintenance**

Maine Yankee and their contractors safely demolished the Containment Building through the use of mechanical demolition and a series of controlled explosions. Workers implemented appropriate safety practices throughout the demolition process. Security staff ensured personnel access was controlled and all staff accounted for at the time of the explosive demolition. No findings of significance were identified.

#### Plant Support

During the week of May 24, 2004, NRC staff from NMSS and Region I and the staff from NRC's contractor ORISE ESSAP performed an in-process evaluation of Maine Yankee's Final Status Survey program for specified survey units in the Containment Building. Specific details of ESSAP's evaluation are contained in the accompanying ORISE Report. NRC/ORISE radiological surveys performed in Maine Yankee Containment Building Survey Units 1 through 4 did not identify any radiological contamination in excess of NRC-approved site-specific release criteria. No findings of significance were identified.

Maine Yankee radiation protection and radioactive waste staffs demonstrated effective planning in transferring a high activity filter from the Spent Fuel Pool (SFP) to a shielded waste container with minimal personnel exposure. No findings of significance were identified.

Maine Yankee assembled a water treatment system for effectively filtering and processing contaminated water from the SFP. Processed water was sampled and then discharged through an existing radiation monitor and discharge pathway. Samples of processed water were split with the State of Maine and NRC for confirmatory analysis of radiological parameters. Cesium-137 and tritium analytical results show very good agreement between the three laboratories, with one apparent anomalous result in an NRC tritium analysis. Cobalt-60 analyses show more variation, with much of the variation attributable to differences in analytical methods. No findings of significance were identified.

# TABLE OF CONTENTS

EXEC	UTIVE SUMMARY
REPO	RT DETAILS
I. Ope	erations & Maintenance
01 01.1	Conduct of Operations & Maintenance       1         Containment Building Demolition Activities       1
IV. PI	ant Support
R1	Radiation Protection & Chemistry (RP&C) Controls
R1.1	Final Status Survey Program Review & NRC In-process Surveys
R1.2 R1.3	High Activity Waste Handling    4      Fuel Pool Water Treatment and Discharge    5
R1.4	Open Item Review and Closure
V. Ma	anagement Meetings
X1	Community Advisory Panel (CAP) Meeting9
X2	Exit Meeting
PARTI	AL LIST OF PERSONS CONTACTED A-1
INSPE	CTION PROCEDURES USED A-1
ITEMS	OPENED, CLOSED, AND DISCUSSED A-2
LIST C	DF ACRONYMS USED A-2

# **REPORT DETAILS**

#### Summary of Facility Activities

The plant was maintained in a permanently shutdown condition during this inspection period. Final status survey activities were completed in the Containment Building and the building was demolished using a combination of mechanical and explosive methods. Debris removal, primarily soil, steel, and concrete, continues via railcars. Soil remediation and final status surveys are ongoing.

#### I. Operations & Maintenance

## O1 Conduct of Operations & Maintenance

- O1.1 Containment Building Demolition Activities
- a. <u>Scope (Inspection Procedures (IP) 71801, 81700, 86750)</u>

The inspector reviewed the plans and activities involved in the demolition of the Containment Building, including the explosive demolition of the Containment Building walls. Information was gathered through a review of documents, tours of the facility, inspection of work in progress, and discussions with cognizant personnel. The inspector observed the explosive demolition of the Containment Building walls.

#### b. <u>Observations and Findings</u>

The Maine Yankee Containment Building was designed as a robust structure with reinforced concrete walls up to 4' 6" thick and a 3/8" - 1/2" steel liner. Following removal of the reactor vessel and the remaining systems, structures, and components within the building and the completion of remediation activities, final status surveys were conducted. Approximately 20,000 yd<sup>3</sup> of sand was then used to fill the Containment Building basement.

Because of the height of the Containment Building (150 feet high), conventional excavating equipment with hydraulic hammers could not be used to safely demolish the upper portion of the structure. Maine Yankee engineered an alternative that used a combination of mechanical demolition and explosives to safely raze the building without affecting other nearby structures, including a nearby 345 kV switchyard that is still in use by Central Maine Power Company.

The engineered alternative involved using mechanical excavators to cut a series of nine 75'- high arches in the Containment Building walls. The arches ranged from 26' - 50' with the resultant columns ranging from 11' - 18'. Engineering analyses confirmed that the remaining columns were structurally sound, but sufficient material had been removed so that the columns could be collapsed by explosive charges. Mechanical excavators would complete the demolition process. The columns were wrapped with

chain-link fence and geotextile fabric to control flying debris from the explosion. Explosive charges were placed in holes drilled in the columns and redundant detonators connected. The charges were set off once all safety conditions were established and the upper containment dome was successfully dropped. Seismic measurements confirmed that the blast and resultant structure collapse did not cause any disruptive impact to nearby structures.

The inspector made safety and security observations throughout the demolition process. Workers in elevated locations were observed to be wearing required safety harnesses. Access was controlled to areas below mechanical excavation to prevent injury from falling debris. Security staff and the explosives contractor ensured positive control was maintained at all times for the explosive materials.

Due to the public and media interest in the explosive event, special site access control measures were employed on the day of the explosion. Authorized visitors, media representatives, and site workers were allowed through the primary site access check point and directed to a viewing area established about one half mile from the containment building. A temporary roadblock was established to prevent closer access. Workers directly involved or inspecting the explosive demolition required specific approval for entry past the roadblock and security staff maintained an updated listing of access and egress. A 1000' exclusion zone was established inside the roadblock area for the staff directly performing or inspecting the explosive demolition. Security staff performed a 100% accountability before allowing the blast to proceed.

#### c. <u>Conclusion</u>

Maine Yankee and their contractors safely demolished the Containment Building through the use of mechanical demolition and a series of controlled explosions. Workers implemented appropriate safety practices throughout the demolition process. Security staff ensured personnel access was controlled and all staff accounted for at the time of the explosive demolition. No findings of significance were identified.

#### **IV. Plant Support**

## R1 Radiation Protection & Chemistry (RP&C) Controls

#### R1.1 Final Status Survey Program Review & NRC In-process Surveys

#### a. <u>Scope (IP 83801)</u>

During the week of May 24, 2004, NRC staff from the Office of Nuclear Material Safety & Safeguards and the NRC Region I Office and NRC's contractor, the Oak Ridge Institute for Science and Education's (ORISE's) Environmental Survey and Site Assessment Program (ESSAP), performed a review of Maine Yankee's implementation of their Final Status Survey (FSS) program. NRC staff performed a review of FSS records and ORISE staff performed independent radiological surveys of the

Containment Building Survey Units 1 through 4. Information was gathered through reviews of documents, interviews with cognizant personnel, and performance of inprocess radiological surveys.

#### b. Observations and Findings

Maine Yankee's Containment Building formerly contained the reactor vessel, steam generators, other components of the reactor primary system, the polar crane, and reinforced concrete structural support for the equipment. Remediation efforts removed all of these major components and structural concrete from the building. Survey Units 1 through 4 of this building consisted of the steel liner on the containment walls and floor, the in-core instrumentation (ICI) sump beneath the reactor, and pedestals for the steam generators and reactor coolant pumps. Total surface area for these four survey units was approximately 2600 m<sup>3</sup>. These survey units are designated Class I Areas (contamination above release criteria) in accordance with the guidance in NUREG-1575, Rev. 1, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)". Accordingly, NRC and ORISE reviewed available Maine Yankee remediation and final status survey data for these areas.

The ORISE/ESSAP staff performed survey activities on the interior Containment Building surfaces in accordance with an NRC-approved site-specific survey plan and ORISE/ESSAP survey procedures and Quality Assurance manual. Surveys in these areas were intended to be confirmatory surveys of Maine Yankee's final status surveys. Because all Maine Yankee FSS packages were not complete at the time of the ORISE/ESSAP survey, the data represent independent in-process surveys for these areas. ORISE/ESSAP survey activities consisted of beta and gamma surface scans, total beta surface activity measurements, and smear sampling for removable alpha and beta contamination. Samples and data were transported to the ORISE/ESSAP Oak Ridge, TN facility for analysis and interpretation.

Surfaces were scanned for total beta activity using gas-flow proportional detectors and scanned for gamma radiation using scintillation detectors. Beta and gamma radiation surface scans were performed on approximately 10 - 50% of the upper and lower containment walls, approximately 80% of the containment floor, and 90% of the ICI sump. Beta radiation surface scans were also performed on the three steam generator pedestals. Portions of the containment building floors and walls were unavailable for surveys due to water seepage and runoff.

Maine Yankee's site specific derived concentration guideline level (DCGL<sub>W</sub>) for interior surfaces of the Containment Building, as specified in Chapter 6 of Maine Yankee's License Termination Plan (LTP), is 18,000 dpm/100 cm<sup>2</sup> (gross beta activity) above background. For elevated areas of contamination, surface activity results are compared to a derived concentration guideline level for elevated measurements comparison (DCGL<sub>EMC</sub>) that is based on the DCGL<sub>W</sub> for the survey unit and an Area Factor that depends on the physical size of the elevated area. These calculations are also specified in the Maine Yankee LTP. For an elevated area of 100 cm<sup>2</sup> in the Containment Building, the DCGL<sub>EMC</sub> is 90,000,000 dpm/100 cm<sup>2</sup>.

The ORISE/ESSAP survey identified 23 locations with residual contamination exceeding the DCGL<sub>w</sub>. Measured values ranged from 23,000 to 210,000 dpm/100 cm<sup>2</sup>. Of the 23 locations, 21 were small in size, approximately 100 cm<sup>2</sup>. All in-process inspection total surface activity measurements satisfied the appropriate DCGL for the specific area. No significant removable beta or alpha surface activity was identified. Specific details of the ORISE/ESSAP data are contained in ORISE Report, "Final Letter Report - In-process Inspection Survey Results for the Containment Building Interior, Survey Units 1 Through 4, Maine Yankee Atomic Power Company, Wiscasset, Maine", October 20, 2004. A copy of this report is attached.

An inspection visit during the week of October 25, 2004, was performed by NMSS and Region I staff to review FSS data, and confirmatory measurements were conducted by ORISR/ESSAP staff along with NMSS staff during the weeks of November 15 and December 6, 2004. Information from these inspection visits will be discussed in a subsequent inspection report.

c. <u>Conclusion:</u>

During the week of May 24, 2004, NRC staff from NMSS and Region I and the staff from NRC's contractor ORISE ESSAP performed an in-process evaluation of Maine Yankee's FSS program for specified survey units in the Containment Building. Specific details of ESSAP's evaluation are contained in the accompanying ORISE Report. NRC/ORISE radiological surveys performed in Maine Yankee Containment Building Survey Units 1 through 4 did not identify any radiological contamination in excess of NRC-approved site-specific release criteria.

#### R1.2 High Activity Waste Handling

#### a. <u>Scope (IPs 83750, 86750)</u>

The inspector reviewed the preparation, coordination, and handling of high activity filters that were removed from the Spent Fuel Pool (SFP). Information was gathered through tours of the facility, attendance at as low as reasonably achievable (ALARA) briefings, review of documents, direct observation of work in progress, and discussions with cognizant personnel.

#### b. Observations and Findings

The inspector reviewed activities associated with the transfer of high activity bags of waste and filters into a shielded high-integrity container. One filter in particular required special handling due to a contact exposure rate of 1200 R/hour (R/hr). High-activity debris that was identified in the bottom of the SFP was vacuumed up and was deposited on a filter in the SFP cleanup system. The radiation protection and radioactive waste staffs developed a work plan to transfer the filter from the pool to a shielded high integrity container while minimizing dose to personnel and contamination of the waste handling area. The work plan included effective use of cameras for remote viewing, radio communications to control and coordinate the movement of staff, access controls

to prevent entry to high dose rate areas, identification of low dose rate waiting areas, contamination controls for hot particle concerns, and fabrication of a shielded transfer container to reduce the dose rate from the filter. Observations during a pre-job briefing confirmed appropriate job planning had been performed and contingencies considered. The filter transfer was safely completed with minimal radiation exposures to personnel.

#### c. <u>Conclusion</u>

Maine Yankee radiation protection and radioactive waste staffs demonstrated effective planning in transferring a high activity filter from the SFP to a shielded waste container with minimal personnel exposure. No findings of significance were identified.

#### R1.3 Fuel Pool Water Treatment and Discharge

#### a. <u>Scope (IP 84750)</u>

The inspector reviewed the plans, procedures, equipment, and processes used for treatment and discharge of contaminated water from the SFP. Information was gathered through review of documents and sample data, tours of the facility, interviews with cognizant personnel, direct observations of work in progress, and independent confirmatory analyses. Data from analyses performed by the State of Maine laboratory was also used for comparison.

#### b. Observations and Findings

The SFP contained approximately 425,000 gallons of water contaminated with low levels of radionuclides (primarily H-3, Co-60, and Cs-137). The 155,000-gallon Primary Water Storage Tank (PWST) served as a batch tank where filtered water from the SFP was collected and then processed through demineralizer resins and an additional filter. Two 20,000 gallon capacity "Frac" tanks were used as batch tanks for smaller volumes. Cobalt-60 present as very fine particulates in the water required additional treatment with polymer flocculating agents to more effectively reduce concentrations.

Following processing, the contents of the batch tanks were recirculated equivalent to a minimum of three batch volumes, then sampled and analyzed for radiological and environmental parameters (oil and grease and total suspended solids). Samples were split with the NRC and the State of Maine for confirmatory radiological analyses (gamma spectrometry and tritium). The NRC samples were shipped to the NRC's contractor laboratory, ORISE for analysis. Maine Yankee also performed gamma spectrometry and tritium analyses on the split samples. The analytical sample results from the three laboratories are reported in the accompanying tables.

NRC and the State of Maine analyzed the water samples by gamma spectroscopy to detection limits that were lower than Maine Yankee. Accordingly, in some samples, both NRC and the State of Maine detected small quantities of cobalt-60 and cesium-137 that were less than the Maine Yankee detection limit. Nonetheless, Maine Yankee detection limits are sufficiently sensitive to meet required criteria. At the request of the

laboratories, the samples for gamma spectrometry that were provided to the NRC and the State of Maine were acidified prior to shipment to prevent plate-out of particulate material on the walls of the sample containers. Maine Yankee samples were analyzed shortly after collection and were not acidified. As a result of the acidification, the Co-60 particulates are dissolved and the resultant samples are more homogenous than the original sample. As indicated in the sample analyses for Co-60, the Maine Yankee samples appear to be measurably greater in Co-60 concentration, but this result is likely due to the particulates settling closer to the detector during the counting process and biasing the results. Additional differences may be attributable to the ability to get true homogenous samples since the Co-60 is present as minute particles in the test tank. As indicated in Table 1, Cs-137 concentrations show very good agreement between the three laboratories. Cesium-137 is typically in solution in water samples of this type and sample homogeneity is not an issue. All three laboratories participate in laboratory certification testing and have provided acceptable results for test samples.

Split samples were also analyzed for tritium (H-3) concentrations. Analytical results from the three laboratories show generally good agreement for tritium concentrations with one exception. The NRC/ORISE sample from "Frac B" tank on July 17, 2004 was significantly different than the data from the Maine Yankee or State of Maine sample result. Sample re-analysis of this sample confirmed the original data.

Following processing of the water and sample analysis, water was discharged through the existing discharge outfall into the Back River. An in-line radiation monitor monitored the water during the discharge. Calculations for Maine Yankee water effluent discharges were performed in accordance with the requirements in its approved Offsite Dose Calculation Manual.

$ \begin{array}{ c c c c c } Sample & Date of Sample & Measurement Laboratory & Radionuclide Concentration picocuries/liter (pCi/l)a, c & \hline Co-60 & Cs-137 \\ \hline TK-16 & March 16, 2004 & Maine Yankee & 4460 \pm 230 & <85 \ ^{b} \\ \hline State of Maine & 1078 \pm 41 & 61.1 \pm 4.8 \\ \hline NRC/ORISE & 329 \pm 15 & 72.6 \pm 5.6 \\ \hline TK-16 & May 1, 2004 & Maine Yankee & 22,070 \pm 940 & <215 \ ^{b} \\ \hline State of Maine & 3870 \pm 150 & 59.5 \pm 11.5 \\ \hline NRC/ORISE & 4070 \pm 160 & 71 \pm 14 \\ \hline TK-16 & July 17, 2004 & Maine Yankee & 51,400 \pm 2240 & 3406 \pm 362 \\ \hline TK-16 & July 17, 2004 & Maine Yankee & 51,400 \pm 2240 & 3406 \pm 362 \\ \hline State of Maine & 8661 \pm 221 & 3209 \pm 146 \\ \hline NRC/ORISE & 15,120 \pm 580 & 3270 \pm 150 \\ \hline \end{array} $	Table 1 Maine Yankee, State of Maine and NRC/ORISE Gamma Spectroscopy Analyses of Water Samples Maine Yankee Spent Fuel Pool Discharges					
$\begin{array}{c c c c c c c c c c c c c c c c c c c $						
$\frac{2004}{1000} = \frac{1000}{1000} = \frac{1000}{1000$				Co-60	Cs-137	
State of Maine $1078 \pm 41$ $61.1 \pm 4.8$ NRC/ORISE $329 \pm 15$ $72.6 \pm 5.6$ TK-16         May 1, 2004         Maine Yankee $22,070 \pm 940$ $< 215^{\text{ b}}$ State of Maine $3870 \pm 150$ $59.5 \pm 11.5$ NRC/ORISE $4070 \pm 160$ $71 \pm 14$ TK-16         July 17, 2004         Maine Yankee $51,400 \pm 2240$ $3406 \pm 362$ State of Maine $8661 \pm 221$ $3209 \pm 146$	TK-16		Maine Yankee	4460 <u>+</u> 230	< 85 <sup>b</sup>	
TK-16         May 1, 2004         Maine Yankee $22,070 \pm 940$ $< 215^{b}$ State of Maine $3870 \pm 150$ $59.5 \pm 11.5$ NRC/ORISE $4070 \pm 160$ $71 \pm 14$ TK-16         July 17, 2004         Maine Yankee $51,400 \pm 2240$ $3406 \pm 362$ State of Maine         8661 \pm 221 $3209 \pm 146$			State of Maine	1078 <u>+</u> 41	61.1 <u>+</u> 4.8	
2004       State of Maine $3870 \pm 150$ $59.5 \pm 11.5$ NRC/ORISE $4070 \pm 160$ $71 \pm 14$ TK-16       July 17, 2004       Maine Yankee $51,400 \pm 2240$ $3406 \pm 362$ State of Maine $8661 \pm 221$ $3209 \pm 146$			NRC/ORISE	329 <u>+</u> 15	72.6 <u>+</u> 5.6	
State of Maine         3870 ± 150         59.5 ± 11.5           NRC/ORISE         4070 ± 160         71 ± 14           TK-16         July 17, 2004         Maine Yankee         51,400 ± 2240         3406 ± 362           State of Maine         8661 ± 221         3209 ± 146	TK-16		Maine Yankee	22,070 <u>+</u> 940	< 215 <sup>b</sup>	
TK-16         July 17, 2004         Maine Yankee         51,400 ± 2240         3406 ± 362           State of Maine         8661 ± 221         3209 ± 146			State of Maine	3870 <u>+</u> 150	59.5 <u>+</u> 11.5	
2004         State of Maine         8661 $\pm$ 221         3209 $\pm$ 146			NRC/ORISE	4070 <u>+</u> 160	71 <u>+</u> 14	
State of Maine 8661 <u>+</u> 221 3209 <u>+</u> 146	TK-16		Maine Yankee	51,400 <u>+</u> 2240	3406 <u>+</u> 362	
NRC/ORISE 15,120 + 580 3270 + 150			State of Maine	8661 <u>+</u> 221	3209 <u>+</u> 146	
			NRC/ORISE	15,120 <u>+</u> 580	3270 <u>+</u> 150	
FRAC "A"         July 17,         Maine Yankee         11,770 ± 540         7300 ± 680	FRAC "A"		Maine Yankee	11,770 <u>+</u> 540	7300 <u>+</u> 680	
2004 State of Maine 3333 <u>+</u> 128 6326 <u>+</u> 403		2004	State of Maine	3333 <u>+</u> 128	6326 <u>+</u> 403	
NRC/ORISE 2360 <u>+</u> 90 6300 <u>+</u> 290			NRC/ORISE	2360 <u>+</u> 90	6300 <u>+</u> 290	
FRAC "B" July 17, Maine Yankee < 48 <sup>b</sup> 437 <u>+</u> 59	FRAC "B"	July 17, 2004	Maine Yankee	< 48 <sup>b</sup>	437 <u>+</u> 59	
2004         State of Maine         14.5 ± 1.9         441 ± 22			State of Maine	14.5 <u>+</u> 1.9	441 <u>+</u> 22	
NRC/ORISE     43.1±5.8     454±23       a.     Maine YankeeOffsite Dose Calculation Manual, Table 2.6, Required Counting System Sensitivity of Analysis for Effluents < 500 pCi/Liter						

Table 2 Maine Yankee, State of Maine and NRC/ORISE Tritium Analyses of Water Samples Maine Yankee Spent Fuel Pool Discharges

Commis	Data of Oceanity	Tritium Concentration picocuries/liter (pCi/I)				
Sample ID.	Date of Sample	Maine Yankee <sup>a,b</sup> State of Maine		NRC/ORISE°		
TK-16	March 16, 2004	(1.84 <u>+</u> 0.02)E6	(1.66 <u>+</u> 0.01)E6	(1.89 <u>+</u> 0.04)E6		
TK-16	May 1, 2004	(1.97 <u>+</u> 0.02)E6	(1.94 <u>+</u> 0.01)E6	(2.28 <u>+</u> 0.05)E6		
TK-16	July 17, 2004	(1.93 <u>+</u> 0.01)E6	(1.96 <u>+</u> 0.01)E6	(2.27 <u>+</u> 0.05)E6		
FRAC "A"	July 17, 2004	(1.61 <u>+</u> 0.04)E5	(1.51 <u>+</u> 0.01)E5	(1.83 <u>+</u> 0.04)E5		
FRAC "B"	July 17, 2004	(2.06 <u>+</u> 0.12)E4	(2.25 <u>+</u> 0.03)E4	(2.14 <u>+</u> 0.04)E6		

Maine Yankee Offsite Dose Calculation Manual, Table 2.6, Required Counting System Sensitivity of Analysis for Tritium in Effluents = 10,000 pCi/Liter Maine Yankee certainties represent the 68% confidence level based on counting statistics.

b. c NRC certainties represent the 95% confidence level, based on total propagated uncertainties.

#### Conclusion C.

Maine Yankee assembled a water treatment system for effectively filtering and processing contaminated water from the SFP. Processed water was sampled and then discharged through an existing radiation monitor and discharge pathway. Samples of processed water were split with the State of Maine and NRC for confirmatory analysis of radiological parameters. Cesium-137 and tritium analytical results show very good agreement between the three laboratories, with one apparent anomalous result in an NRC tritium analysis. Cobalt-60 analyses show more variation, with much of the variation attributable to differences in analytical methods. No findings of significance were identified.

#### R1.4 Open Item Review and Closure

(Closed AV 05000309/2004001-01: "Failure to Follow Procedure Requirements for the Response Checking of RP Instrumentation" and AV 05000309/2004001-02: "Inaccurate Records Created Regarding Response Checks of RP Instrumentation") The NRC documented two apparent violations in Inspection Report 05000309/2004001 relating to a contract health physics technician's failure to perform certain performance checks for portable survey meters in accordance with procedural requirements and creating inaccurate records concerning such checks. These issues were identified by Maine Yankee and reported to the NRC. The NRC initiated an investigation and confirmed that the technician deliberately violated station procedures and falsified the related documentation. The violations were evaluated in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600, and based on the nature of the violations and Maine Yankee's prompt identification to the NRC and

initiation of corrective actions, the violations were classified as Non-Cited Violations. The NRC's actions were documented in correspondence dated November 17, 2004. NRC reviewed the corrective actions and determined that the meetings held with the Radiation Protection staff and the termination of the contractor's access to Maine Yankee clearly indicate Maine Yankee's expectation for performance and the consequence for performance outside these expectations. These two apparent violations are closed. (Closed AV 05000309/2004001-01 and AV 05000309/2004001-02).

(Closed AV 05000309/2004001-04: "Use of 10 CFR 50.59 to increase the DCGL<sub>EMC</sub> without NRC approval in accordance with the LTP") In Inspection Report 05000309/2004001, the NRC initially concluded that Maine Yankee made a change to its License Termination Plan (LTP) that was not authorized pursuant to License Condition 2.B (10) of Maine Yankee's Facility Operating License No. DPR-36. Specifically, Maine Yankee used the 10 CFR 50.59 process to add a new equation to Section 6 of its LTP. The change involved the Derived Concentration Guideline Levels (elevated measurement comparison) (DCGL EMC) set forth in the LTP. After further evaluation of that apparent violation, the NRC now concludes that NRC approval of this LTP change was not required. Therefore, no violations of the license condition or 10 CFR 50.59 occurred. The NRC plans no further action with respect to this issue. The NRC's actions were documented in correspondence dated November 17 and 22, 2004. This apparent violation is closed. (Closed AV 05000309/2004001-04).

#### V. Management Meetings

## X1 Community Advisory Panel (CAP) Meeting

On September 15, 2004, Mark C. Roberts, NRC Region I, attended the Maine Yankee CAP Meeting. Mr. Roberts presented an overview of NRC activities and inspection findings relating to Maine Yankee and answered questions from the panel.

#### X2 Exit Meeting

The inspectors presented inspection results to representatives of the licensee's staff at the end of each inspection visit during the inspection period. On January 27, 2005, a summary of the inspection findings for the entire inspection period was presented to James Connell, William Henries, and others. Licensee representatives acknowledged the inspection findings.

# PARTIAL LIST OF PERSONS CONTACTED

Licensee and Contractor Staff

- R. Benner, Director, Decommissioning
- R. Milligan, Manager Safety
- J. Connell, Radiation Protection Manager
- S. Evans, Environmental Remediation Manager
- T. Feigenbaum, President
- W. Henries, Director, Engineering
- E. Howes, Director Public and Government Affairs
- D. Hulbert, Waste Logistics Project Manager
- L. Jewett, Assistant Operations Manager
- D. Loizeaux, Demolition Contractor
- M. Meisner, Chief Nuclear Officer
- E. Mercer, Radiological Engineering Supervisor
- J. Niles, ISFSI Manager,
- J. Packer, Final Site Survey
- G. Pillsbury, Engineer Final Site Survey
- M. Readinger, Manager, Radwaste
- J. Rzasa, Security Supervisor
- T. Shippee, QPD Manager
- M. Whitney, Licensing
- T. Williamson, Director NSRA

## State of Maine

- P. Boudreau, Lead Radiochemist
- P. Dostie, Maine Nuclear Safety Inspector

# INSPECTION PROCEDURES USED

- IP 36801: Organization, Management & Cost Controls
- IP 37801: Safety Reviews, Design Changes, and Mods at PSRs
- IP 40801: Self-Assessment, Auditing, and Corrective Actions
- IP 60855: Operation of an ISFSI
- IP 71801: Decommissioning Performance and Status Review
- IP 81700: Physical Security Assessment
- IP 83750: Occupational Radiation Exposure
- IP 83801: Inspection of Final Status Surveys
- IP 84750: Radwaste Treatment and Effluent & Environmental Monitoring
- IP 86750: Solid Radwaste Management & Transportation of Radioactive Material

#### A-2

#### ITEMS OPENED, CLOSED, AND DISCUSSED

Items Opened: None

Items Closed: AV 05000309/2004001-01: "Failure to Follow Procedure Requirements for the Response Checking of RP Instrumentation"

AV 05000309/2004001-02: "Inaccurate Records Created Regarding Response Checks of RP Instrumentation"

AV 05000309/2004001-04:: "Use of 10 CFR 50.59 to increase the  $\text{DCGL}_{\text{EMC}}$  without NRC approval in accordance with the LTP"

Items Discussed: None

#### LIST OF ACRONYMS USED