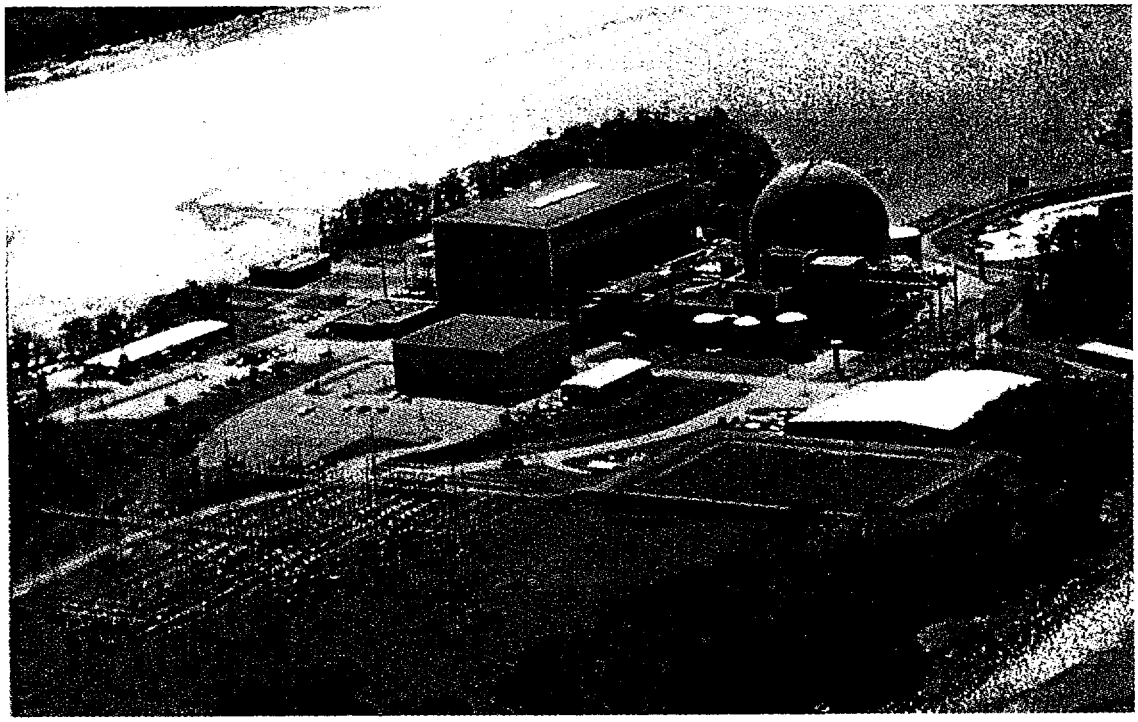
DURATEK

CHARACTERIZATION SURVEY REPORT
for the
MAINE YANKEE ATOMIC POWER PLANT

VOLUME 5
RADIOLOGICAL CHARACTERIZATION RESULTS FOR AFFECTED SYSTEMS



APRIL 1998
REVISION 1

Prepared By:

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GTS DURATEK

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for the

MAINE YANKEE ATOMIC POWER PLANT

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REVISION 1

VOLUME 5:
RADIOLOGICAL CHARACTERIZATION RESULTS FOR AFFECTED SYSTEMS

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VOLUME 5: RADIOLOGICAL CHARACTERIZATION RESULTS FOR AFFECTED SYSTEMS

TABLES

1.0 BACKGROUND INFORMATION

GTS Duratek prepared this Characterization Survey Report for the Maine Yankee Atomic Power Company (MYAPCO) to document the results of the characterization survey of the Maine Yankee Atomic Power Plant (MYAPP). The Characterization Survey Report comprises the nine volumes listed in Table 1-1 below. Volume 1 of the Report provides the programmatic information relevant to volumes 2 through 7. This volume (5) provides the characterization results for Group C, Affected Systems.

Table 1-1
Characterization Survey Report Volumes

Volume No.	Description
1	Characterization Survey Description
2	Radiological Characterization Results for Unaffected Structures and Surfaces, including Structural Background Survey
3	Radiological Characterization Results for Affected Structures and Surfaces
4	Radiological Characterization Results for Unaffected Systems
5	Radiological Characterization Results for Affected Systems
6	Radiological Characterization Results for Affected and Unaffected Environs, including Environs Background Survey
7	Hazardous Material Characterization
8	Maine Yankee Reactor Vessel Activation Analysis to Support Site Characterization
9	Asbestos Quantity Survey

2.0 SITE INFORMATION

Volume 1, Section 2 of this Characterization Survey Report describes the Maine Yankee Atomic Power Plant site.

3.0 CHARACTERIZATION SURVEY OVERVIEW

Volume 1, Section 3 of this Characterization Survey Report provides an overview of the general survey process, including objectives, organization and responsibilities, instrumentation, planning, survey techniques, survey package implementation, sample analysis and quality control, characterization data review and reporting, and quality assurance. This section (Volume 5 Section 3) provides an overview of the survey of affected systems.

Project personnel used plant historical data, system walkdowns, previous GTS Duratek experience, and assistance from Maine Yankee operations staff to prepare survey packages for 17 plant systems presumed to be radiologically affected by plant operations. Each survey package described the system, its history and use, and the quantity and type of measurements and samples to be collected. For affected systems, the surveys normally included exposure rate measurements at the vertical midpoint of the component, removable alpha and beta measurements of system internals, and smear, crud and debris samples from specified locations for gamma spectral analysis. The survey also included beta scans of accessible surfaces and direct beta measurements to the extent possible, based on access, dose rate and surface radioactivity limitations. GTS Duratek characterized highly contaminated plant systems using indirect measurements (e.g., smears or material samples) and exposure rate measurements. Contact dose rates on smears had to be less than 1 mR/hr to perform gamma spectroscopy analysis. The contaminated system measurements can be used to plan the decommissioning, including decontamination techniques, ALARA measures for the dismantlement/removal of systems, schedules, costs, waste volumes, and health and safety considerations.

Component exposure rate measurements may be affected by the background radiation levels/gradients in the component's general area. To assess this affect, the survey team collected multiple measurements in the vicinity of each surveyed component. Typically, this included measurements 15 cm and one meter from the component surface north, east, south, and west of the component. The survey team used the Ludlum Model 2350 Data Logger to obtain and log these measurements expeditiously, thus maintaining their exposures ALARA.

The survey packages provided the guidelines in Table 3-1 for exposure rate measurement detector selection. Table 3-2 contains the guidelines for selecting instruments to count beta smears.

Table 3-1 Exposure Rate Measurement Detector Selection Guidelines

Exposure Rate Range	Suggested Detector
Exposure Rate≤ 1 mR/hr	Ludlum Model 44-2 in the scaler mode and a 60 second count time
1 mR/hr < Exposure Rate ≤ 500 mR/hr	Ludlum Model 44-38 detector (closed window) operated in the rate meter mode and 0 (zero) count time
200 mR/hr < Exposure Rate ≤ 4000 mR/hr	Ludlum Model 133-4 detector operated in the rate meter mode and 0 (zero) count time
Exposure Rate > 4000 mR/hr	Selected on a case-by-case basis

Table 3-2 Guidelines for Selecting Instruments to Count Beta Smears

Beta Surface Activity Range	Suggested Detector
<30,000 dpm/100 cm^2	Tennelec
≥30,000 dpm/100 cm^2	Eberline RM-14 or Ludlum 44-40 set for counting smears using the L5 code LAB03

4.0 SURVEY FINDINGS AND RESULTS

Table 4-2 lists the affected systems survey packages.

Appendix A contains a characterization report for each survey package listed in Table 4-2. Each report contains the following forms, which are described in more detail below:

- Characterization Summary,
- Summary of Survey Units,
- Statistical Summary and Graph for selected measurement types,
- Results Listing Report for each measurement type,
- Exposure Rate Distance Ratios,
- Download File & Survey Instrumentation Calibration Summary for selected measurement types,
- Removable Contamination - Tritium Activity Results Listing, and
- Gamma Spectral Analysis Results Listing.

The **Characterization Summary** contains the survey package description and general historical information on the survey area, including equipment, operating history, construction materials, and past contamination incidents. The Characterization Summary also contains a summary of characterization activities, characterization survey results and, if available, references (e.g., documents, interviews).

The **Summary of Survey Units** contains the survey package description (i.e., system), lists the survey units within each survey area (i.e., equipment identification), and the survey reason with code. The Summary of Survey Units also includes a list of materials in each survey area (e.g., metal) and the background values for each that were used to correct gross measurements.

The **Statistical Summary and Graph** presents statistics and a graph of results for each type of measurement (direct measurements for total beta activity, removable alpha and beta activity and exposure rate measurements) performed for the survey area. Statistics typically include: mean, maximum, minimum, standard deviation, minimum detectable activity calculated for the specified data set and measurement type, number of samples reported, and number of samples prescribed. Various tests were performed for each data set and measurement type reported.

A **Results Listing Report** is presented with each Statistical Summary and Graph for each applicable type of measurement (direct measurements for total beta activity, removable alpha and beta activity, and exposure rate). The Results Listing Report contains the corrected data and location information for each measurement. The results of direct measurements for total beta activity are reported in net dpm per 100 cm^2 after subtracting the background value for the material of construction. The results of the smear samples for removable alpha and beta activity are reported in net dpm/100 cm^2 from the low background alpha and beta counter instrument. The results of exposure rate measurements are reported in net μR/hr (micro R per hour). The exposure rates have not been corrected for background from materials of construction.

For the exposure rate measurements, the odd-numbered L8 codes in the results listing denote measurements collected 15 centimeters from the system component surface. The even-numbered L8 codes denote measurements collected 1 meter from the system component surface. The codes designate directional location as follows:

- L8 codes 00001 and 00002 are North compass point readings.
- L8 codes 00003 and 00004 are East compass point readings.
- L8 codes 00005 and 00006 are South compass point readings.
- L8 codes 00007 and 00008 are West compass point readings.

A **Download File & Survey Instrumentation Calibration Summary** is presented with each Statistical Summary and Graph for selected measurement types. The Download File & Survey Instrumentation Calibration Summary provides survey date, file number (Download #- Station #), detector model number, instrument and detector serial numbers and calibration due date(s) and technician's identification number for each instrument and detector combination used to collect data.

The **Exposure Rate Distance Ratios** form provides the ratio of 15 cm to 1 m exposure rates for selected components. The form includes a graph of 15 cm and 1 m exposure rates by component number.

For the surveys prescribing tritium smear samples, a **Removable Contamination - Tritium Activity Results Listing** report is presented. The results listing report contains the corrected data, location information, Sample ID and Sample Type for each measurement. The results of the smear samples for removable tritium activity are reported in net dpm/100 cm^2 from the liquid scintillation counter instrument. An instrument calibration summary is presented with the results listing and provides survey date, instrument manufacturer, model number, serial number, calibration due date and technician's initials for the instrument used to analyze the sample.

For survey areas/packages where samples for gamma spectral analysis were prescribed, the characterization report contains a **Gamma Spectral Analysis Results Listing**. The results listing includes the sample survey location, Lab ID, Spectrum filename, sample mass, count time and the activity, MDA and associated 2 sigma error (counting uncertainty) for plant-derived radionuclides Mn-54, Co-57, Co-60, Cs-134, and Cs-137. For samples where the activity result is less than the MDA value, a "<" sign (less than) appears to the left of the value in the "Activity" column in units of pCi/g (picoCuries per gram) with a zero pCi/g value for the error. For samples with a positive (greater than MDA) activity pCi/g result, the report includes the associated counting error in units of ±pCi/g. The activity of naturally-occurring K-40 with MDA and associated error is reported as a quality control check. Other naturally occurring radionuclides may be present, but are not reported. Table 4-1 describes the sample type and geometry as indicated by the three letter prefix of the sample Spectrum filename.

Table 4-1
Sample Type and Geometry for Gamma Spectral Analysis

Spectrum Filename Prefix	Sample Type	Sample Geometry	Sample Volume
BIO	Plant Life, Biomass	Marinelli Beaker	1 Liter
ENV	Soil	Marinelli Beaker	1 Liter
FAL	Debris	Petri Dish	40 - 60 ml
H2O	Water	Marinelli Beaker	1 Liter
HDL	Debris, Soil	Marinelli Beaker	0.25 Liter
PET	Filter	Petri Dish	NA

Table 4-2

PACKAGE NUMBER	GROUP "C" Affected Plant Systems Survey Packages
C0100	Primary and Post Accident Sampling System
C0200	Waste Solidification System
C0300	Containment Spray System
C0400	Emergency Core Cooling System
C0500	Residual Heat Removal System
C0600	Primary Vents and Drains
C0700	Fuel Pool Cooling System
C0800	Waste Gas Disposal System
C0900	Pressurizer and Pressurizer Relief System
C1100	Reactor Coolant System
C1200	Boron Recovery System
C1300	Chemical and Volume Control System
C1400	Liquid Waste Disposal System
C1500	Primary Auxiliary Building Drains
C1600	Primary Auxiliary Building Ventilation
C1800	Containment Ventilation System
C1900	Steam Generators

APPENDIX A
CHARACTERIZATION REPORTS FOR AFFECTED SYSTEMS

04/14/98

CHARACTERIZATION SUMMARY

SURVEY PACKAGE NUMBER :C0100 SYSTEMS

PACKAGE DESCRIPTION Primary and Post Accident Sampling System

SURVEY AREA DESCRIPTION

Primary and Post Accident Sampling System

GENERAL HISTORICAL INFORMATION (Operational history, etc.)

The Primary and Post Accident Sampling System transported small quantities of radioactive fluids and gases from the primary plant to two separate sampling stations in the Primary Auxiliary Building (PAB). Portions of the system also degassed the pressurizer steam space and allowed a manually valved-in remote pressurizer pressure indication during Control Room evacuation. The Primary Sampling System allowed sampling of the reactor coolant and auxiliary systems during normal operations. The Post Accident Sampling System (PAS) allowed for sampling of reactor coolant following an accident.

SUMMARY OF CHARACTERIZATION ACTIVITIES

Survey units were established for the system by building and elevation as shown in the following Summary of Survey Units. The Surface(s) listing indicates the component name, survey surface code and, where applicable, the Maine Yankee system component number.

A total of 43 exposure rate measurements were collected at 6 component locations. Due to physical interferences, 5 measurements could not be collected.

Beta scan surveys and direct measurements for total beta activity were not prescribed for this survey package.

Smear samples were collected from component interior surfaces to analyze for removable alpha and beta activity at 5 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable tritium activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable plant-derived radionuclide activity by gamma spectroscopy at 3 survey measurement locations indicated on the results listing report.

The survey result statistical summaries, graphs and results listings are shown in the following individual reports including calibration summaries for the instruments used for each measurement type.

CHARACTERIZATION SURVEY RESULTS

o The average and maximum exposure rate measurement results were 1.4 mR/hr and 4.2 mR/hr, respectively. The ratio of the 15 cm distance measurements to the 1 meter distance measurements ranged from 0.8 to 1.4.

o There were 5 measurements for removable beta activity above MDA (maximum MDA was 5,000 dpm/100cm^2). The maximum measurement result was 300,000 dpm/100cm^2.

o 3 of the 5 smear measurements were analyzed for removable alpha activity and no measurements were above MDA (8.4 dpm/100cm^2).

o There was 1 measurement for removable tritium activity above MDA (39 dpm/100cm^2). The maximum measurement result was 196 dpm/100cm^2.

o Of the 3 samples analyzed by gamma spectroscopy, all samples indicated plant-derived radionuclide activity above MDA. The analysis of the samples indicated the presence of Co-60, Cs-134 and Cs-137.

REFERENCES (Documents, Interviews)

Maine Yankee Drawing 1150 - FM - 96 A, B
Operator System Training Manual, Chapter 5

SUMMARY OF SURVEY UNIT(S)

04/14/98 OUTPUT BATCH SN = 831

PACKAGE C0100 SYSTEMS

Primary and Post Accident Sampling System

UNIT(S)	SURFACE(S)
01 - 21' Primary Auxiliary Building Components	H01 (Primary plant sample cooler E-77A) H02 (Primary plant sample cooler E-77B) M01 (Primary sample sink) P01 (SS tubing upstream of PS-74) P02 (SS tubing downstream of PS-33) P03 (SS tubing upstream of valve PS-82)
02 - 36' Primary Auxiliary Building Components	M01 (Water dilution funnel) U01 (Vacuum pump P-153) U02 (Primary water booster pump P-152)

REASON(S) CHARACTERIZATION SURVEY (C01)

MATERIALS

MAT'L CODE	MATERIAL DESCRIPTION	BETA BKGD (dpm/100 cm²)
G0031	METAL - BARE (GAMMA)	0.0

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Exposure Rate Measurements

Survey Package C0100 SYSTEMS

Primary and Post Accident Sampling System

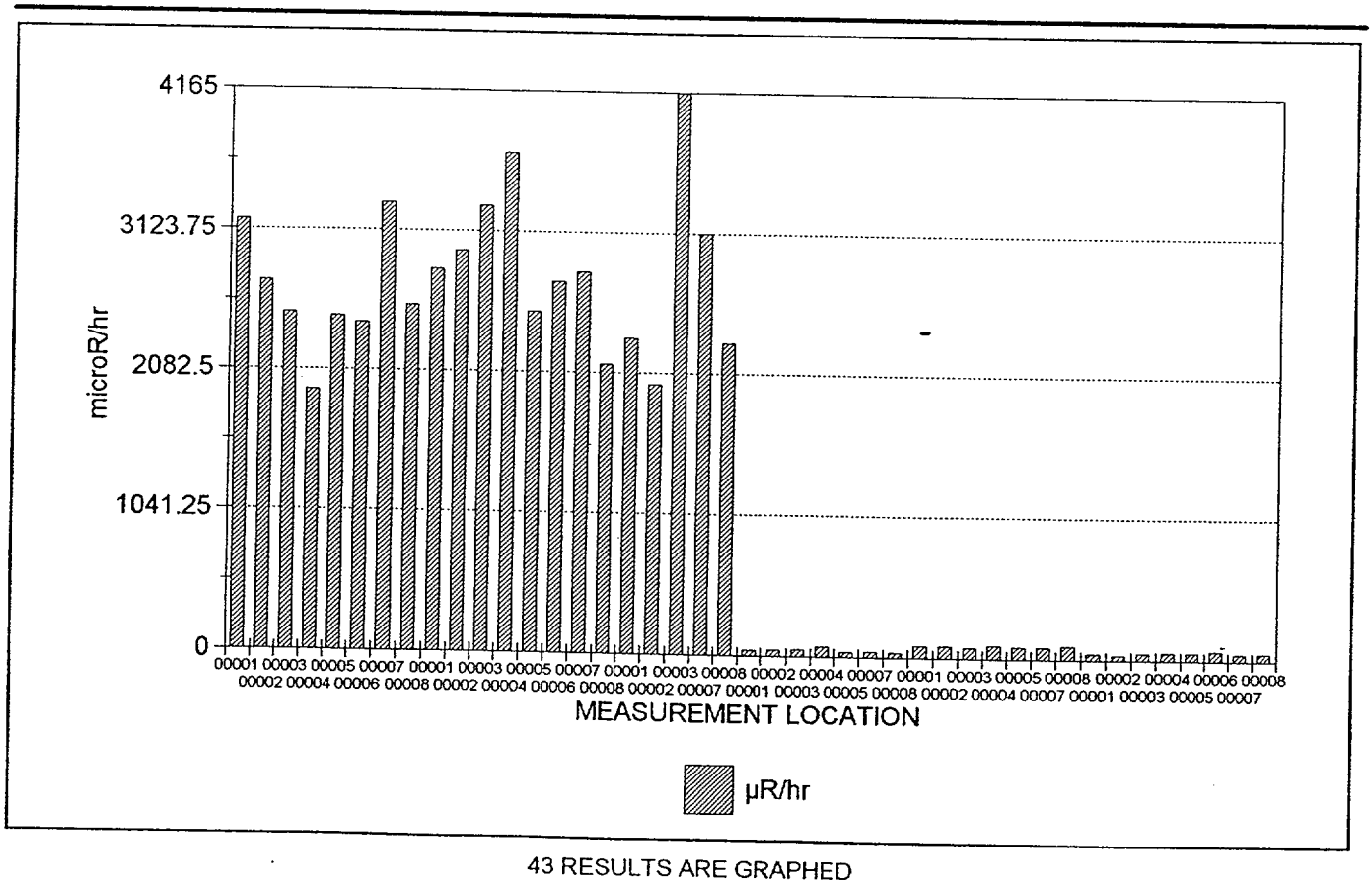
STATISTICAL SUMMARY

	µR/hr
Mean	1,386.0
Maximum	4,161.0
Minimum	35.4
Standard Deviation	1,422.9

Samples Reported	43
Samples Prescribed	43

TESTS PERFORMED

Samples reported satisfy samples prescribed	YES



43 RESULTS ARE GRAPHED

Survey Package : C0100 SYSTEMS

Primary and Post Accident Sampling System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
532 (2)	01	H01	G0031	C01	0.00	00001	***3194.5***
532 (2)	01	H01	G0031	C01	0.00	00002	***2740.8***
532 (2)	01	H01	G0031	C01	0.00	00003	***2505.9***
532 (2)	01	H01	G0031	C01	0.00	00004	***1931.0***
532 (2)	01	H01	G0031	C01	0.00	00005	***2485.6***
532 (2)	01	H01	G0031	C01	0.00	00006	***2438.0***
532 (2)	01	H01	G0031	C01	0.00	00007	***3325.5***
532 (2)	01	H01	G0031	C01	0.00	00008	***2569.8***
532 (2)	01	H02	G0031	C01	0.00	00001	***2835.4***
532 (2)	01	H02	G0031	C01	0.00	00002	***2976.4***
532 (2)	01	H02	G0031	C01	0.00	00003	***3312.7***
532 (2)	01	H02	G0031	C01	0.00	00004	***3706.9***
532 (2)	01	H02	G0031	C01	0.00	00005	***2530.5***
532 (2)	01	H02	G0031	C01	0.00	00006	***2756.7***
532 (2)	01	H02	G0031	C01	0.00	00007	***2826.4***
532 (2)	01	H02	G0031	C01	0.00	00008	***2142.7***
532 (2)	01	M01	G0031	C01	0.00	00001	***2339.6***
532 (2)	01	M01	G0031	C01	0.00	00002	***1997.1***
532 (2)	01	M01	G0031	C01	0.00	00003	***4161.0***
532 (2)	01	M01	G0031	C01	0.00	00007	***3121.2***
532 (2)	01	M01	G0031	C01	0.00	00008	***2306.4***

REMAINING RESULTS PRINTED ON NEXT PAGE

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.

Survey Package : C0100 SYSTEMS

Primary and Post Accident Sampling System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
528 (2)	02	M01	G0031	C01	60.00	00001	***43.2***
528 (2)	02	M01	G0031	C01	60.00	00002	***47.8***
528 (2)	02	M01	G0031	C01	60.00	00003	***50.1***
528 (2)	02	M01	G0031	C01	60.00	00004	***73.8***
528 (2)	02	M01	G0031	C01	60.00	00005	***38.6***
528 (2)	02	M01	G0031	C01	60.00	00007	***41.2***
528 (2)	02	M01	G0031	C01	60.00	00008	***35.4***
528 (2)	02	U01	G0031	C01	60.00	00001	***90.8***
528 (2)	02	U01	G0031	C01	60.00	00002	***90.6***
528 (2)	02	U01	G0031	C01	60.00	00003	***81.1***
528 (2)	02	U01	G0031	C01	60.00	00004	***100.4***
528 (2)	02	U01	G0031	C01	60.00	00005	***91.1***
528 (2)	02	U01	G0031	C01	60.00	00007	***88.4***
528 (2)	02	U01	G0031	C01	60.00	00008	***98.9***
528 (2)	02	U02	G0031	C01	60.00	00001	***48.1***
528 (2)	02	U02	G0031	C01	60.00	00002	***38.8***
528 (2)	02	U02	G0031	C01	60.00	00003	***51.3***
528 (2)	02	U02	G0031	C01	60.00	00004	***55.4***
528 (2)	02	U02	G0031	C01	60.00	00005	***54.8***
528 (2)	02	U02	G0031	C01	60.00	00006	***68.3***
528 (2)	02	U02	G0031	C01	60.00	00007	***50.9***
528 (2)	02	U02	G0031	C01	60.00	00008	***55.5***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.
43 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DOWNLOAD FILE & SURVEY INSTRUMENTATION CALIBRATION SUMMARY

04/14/98

Exposure Rate Measurements

Survey Package : C0100 SYSTEMS

Primary and Post Accident Sampling System

SURVEY		M2350		DETECTOR			
DATE	FILE #	INST S/N	CAL DUE	MODEL	S/N	CAL DUE	TECHNICIAN
2/3/98	528 (2)	126197	3/22/98	44-2	PR126922	4/19/98	JFM0682
						CALIBRATION DATES VERIFIED AS ACCEPTABLE	
2/3/98	532 (2)	126185	3/20/98	44-38	075082	7/23/98	JFM0682
						CALIBRATION DATES VERIFIED AS ACCEPTABLE	

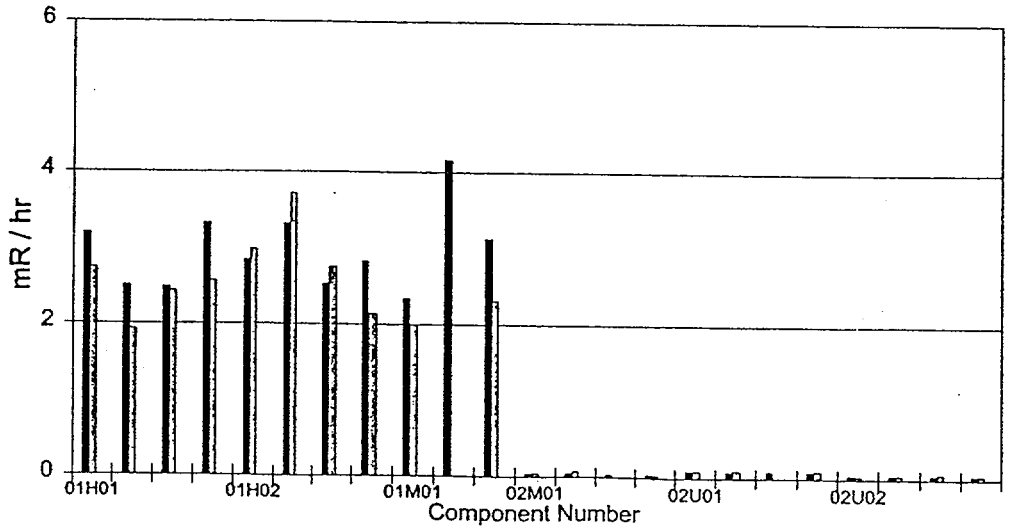
Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

SURVEY PACKAGE C0100

Package Number	Component Number	Component Description	Direction	15 cm mR/hr	1 meter mR/hr	Ratio of 15 cm to 1 meter
C0100	01H01	Primary plant sample cooler E-77A	North	3.2	2.7	1.2
			East	2.5	1.9	1.3
			South	2.5	2.4	1.0
			West	3.3	2.6	1.3
C0100	01H02	Primary plant sample cooler E-77B	North	2.8	3.0	1.0
			East	3.3	3.7	0.9
			South	2.5	2.8	0.9
			West	2.8	2.1	1.3
C0100	01M01	Primary sample sink	North	2.3	2.0	1.2
			East	4.2	*	
			West	3.1	2.3	1.4
C0100	02M01	Water dilution funnel	North	0.0	0.0	0.9
			East	0.1	0.1	0.7
			South	0.0	*	
			West	0.0	0.0	1.2
C0100	02U01	Vacuum pump P-153	North	0.1	0.1	1.0
			East	0.1	0.1	0.8
			South	0.1	*	
			West	0.1	0.1	0.9
C0100	02U02	Primary water booster pump P-152	North	0.0	0.0	1.2
			East	0.1	0.1	0.9
			South	0.1	0.1	0.8
			West	0.1	0.1	0.9

* Measurement not collected due to interfering surface.

Exposure Rates - 15 cm and 1 meter



Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Beta Activity

Survey Package C0100 SYSTEMS

Primary and Post Accident Sampling System

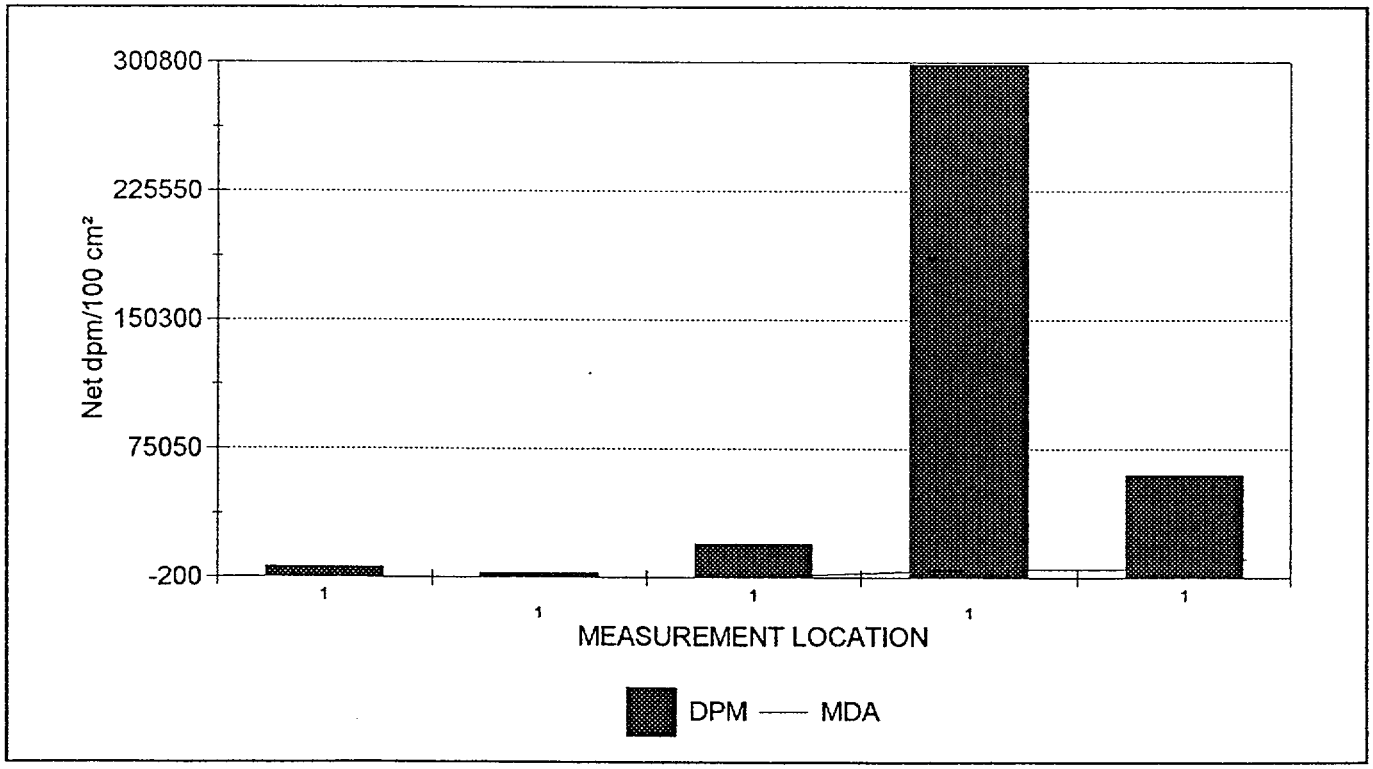
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	77,858.4
Maximum	300,000.0
Minimum	2,885.9
Standard Deviation	126,236.0
MDA	5,000.0

Samples Reported	5
Samples Prescribed	11

TESTS PERFORMED

MDA <100 net dpm/100 cm²	NO
Results above 100 net dpm/100 cm²	5
Number of results above MDA	5



5 RESULTS ARE GRAPHED

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Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Alpha Activity

Survey Package C0100 SYSTEMS

Primary and Post Accident Sampling System

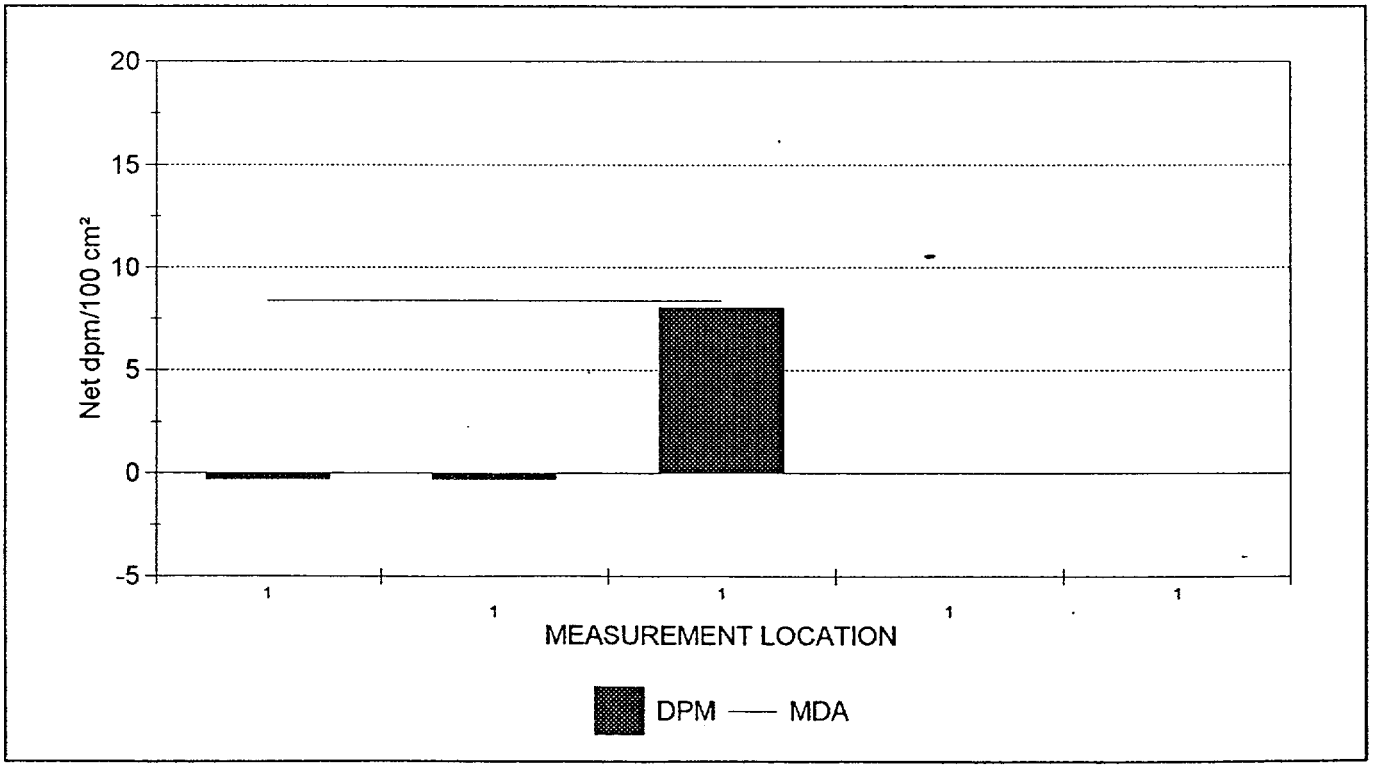
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	1.5
Maximum	8.0
Minimum	-0.3
Standard Deviation	3.7
MDA	8.4

Samples Reported	5
Samples Prescribed	11

TESTS PERFORMED

MDA <10 net dpm/100 cm²	YES
Results above 20 net dpm/100 cm²	0
Number of results above MDA	0



5 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination

Survey Package : C0100 SYSTEMS

Primary and Post Accident Sampling System

RESULTS LISTING - SORTED BY SURFACE CODE

XLS FILE	UNIT	SURFACE	REASON	MSRMNT LOCATION	ALPHA	BETA
RM-14DATA2	01	P03	C01	1		***60,000.0***
RM-14DATA1	01	P02	C01	1		***300,000.0***
SME1E103.XLS	01	P01	C01	1	8.0	***20,088.2***
SME1E101.XLS	01	M01	C01	1	-0.3	***2,885.9***
SME1E101.XLS	01	M01	C01	1	-0.3	***6,317.9***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 100.00 dpm/100 cm² (beta activity) and/or 20.00 dpm/100 cm² (alpha activity).
5 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DATAFILE & ALPHA - BETA COUNTER CALIBRATION SUMMARY

04/14/98 Removable Contamination

Survey Package : C0100 SYSTEMS

Primary and Post Accident Sampling System

SURVEYDATE	XLS FILE	INST ID	S/N	CAL DUE	LAB TECHNICIAN
3/28/98	RM-14DATA1	3	8263	5/26/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/28/98	RM-14DATA2	3	8263	5/26/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E101.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E103.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	

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Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Tritium Activity

Survey Package : C0100 SYSTEMS

Primary and Post Accident Sampling System

RESULTS LISTING - SORTED BY SURFACE CODE

SAMPLE ID	SAMPLE TYPE	UNIT	SURF	REASN	MSRMNT LOCATION	MDA	TRITIUM ACTIVITY
D23	Hoppes patch	01	P01	C01	00001	38.8	-11.7
D24	Hoppes patch	01	P02	C01	00001	39.2	-0.9
D25	Hoppes patch	01	P03	C01	00001	39.2	***195.9***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 75 dpm/100 cm²,
Italic values exceed 100 dpm/100 cm².

Maine Yankee Atomic Power Plant Site Characterization

LIQUID SCINTILLATION COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination - Tritium Activity

Survey Package : C0100 SYSTEMS

Primary and Post Accident Sampling System

SURVEYDATE	INSTRUMENT	MODEL	S/N	CAL DUE	LAB TECHNICIAN
3/5/98	Packard	2750	416221	6/16/98	LDT
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	

Maine Yankee Atomic Power Plant Site Characterization

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98 OUTPUT BATCH SN = 831

Survey Package C0100 SYSTEMS

Primary and Post Accident Sampling System

UNIT : 01 SURFACE : P01 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Plant Piping (interior)
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP001	PET00006	1.0	1200	Co-57	< 64.2	64.2	0.0
				Co-60	2450.00	69.8	193.0
				Cs-134	99.90	104.0	67.1
				Cs-137	521.00	132.0	118.0
				K-40	< 899.0	899.0	0.0
				Mn-54	< 157.0	157.0	0.0

UNIT : 01 SURFACE : P02 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Plant Piping (interior)
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP002	PET00004	1.0	1200	Co-57	< 211.0	211.0	0.0
				Co-60	15000.00	423.0	5,070.0
				Cs-134	< 553.0	553.0	0.0
				Cs-137	< 691.0	691.0	0.0
				K-40	< 1620.0	1,620.0	0.0
				Mn-54	< 851.0	851.0	0.0

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98

OUTPUT BATCH SN = 831

Survey Package C0100 SYSTEMS

Primary and Post Accident Sampling System

UNIT : 01 SURFACE : P03 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Plant Piping (interior)
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP003	PET00005	1.0	1200	Co-57	< 157.0	157.0	0.0
				Co-60	39300.00	409.0	1,830.0
				Cs-134	533.00	321.0	208.0
				Cs-137	2270.00	357.0	917.0
				K-40	< 1280.0	1,280.0	0.0
				Mn-54	< 544.0	544.0	0.0

04/14/98

CHARACTERIZATION SUMMARY

SURVEY PACKAGE NUMBER :C0200 SYSTEMS

PACKAGE DESCRIPTION Waste Solidification System

SURVEY AREA DESCRIPTION
Waste Solidification System

GENERAL HISTORICAL INFORMATION (Operational history, etc.)

The primary purpose of the Waste Solidification System is storage, solidification and packaging of liquid waste and exhausted demineralizer resin beads for eventual off-site disposal. In conjunction with the plant's installed waste solidification system, two contractor systems are also used for waste solidification. The Hittman system is used primarily for the solidification of liquid waste and is not currently used for processing spent resins. A Duratek system is also used for the processing of normal liquid waste.

SUMMARY OF CHARACTERIZATION ACTIVITIES

Survey units were established for the system by building and elevation as shown in the following Summary of Survey Units. The Surface(s) listing indicates the component name, survey surface code and, where applicable, the Maine Yankee system component number.

A total of 30 exposure rate measurements were collected at 5 component locations. Due to physical interferences, 10 measurements could not be collected.

Beta scan surveys and direct measurements for total beta activity were not prescribed for this survey package.

Smear samples were collected from component interior surfaces to analyze for removable alpha and beta activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable tritium activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable plant-derived radionuclide activity by gamma spectroscopy at 3 survey measurement locations indicated on the results listing report.

The survey result statistical summaries, graphs and results listings are shown in the following individual reports including calibration summaries for the instruments used for each measurement type.

CHARACTERIZATION SURVEY RESULTS

o The average and maximum exposure rate measurement results were 23.3 mR/hr and 219.3 mR/hr, respectively. The ratio of the 15 cm distance measurements to the 1 meter distance measurements ranged from 0.7 to 2.6.

o There were 3 measurements for removable beta activity above MDA (34 dpm/100cm^2) and 2 measurements were above 100 dpm/100cm^2. The maximum measurement result was 4,073 dpm/100cm^2.

o There were no measurements for removable alpha activity above MDA (8.4 dpm/100cm^2).

o There was 1 measurement for removable tritium activity above MDA (39 dpm/100cm^2). The maximum measurement result was 1,212 dpm/100cm^2.

o Of the 3 samples analyzed by gamma spectroscopy, 2 samples indicated plant-derived radionuclide activity above MDA. The analysis of the samples indicated the presence of Co-60, Cs-134 and Cs-137.

REFERENCES (Documents, Interviews)

Maine Yankee Drawing 1150 - FM - 99 A, B
Operator System Training Manual, Chapter 39

Maine Yankee Atomic Power Plant Site Characterization

SUMMARY OF SURVEY UNIT(S)

04/14/98 OUTPUT BATCH SN = 837

PACKAGE C0200 SYSTEMS

Waste Solidification System

UNIT(S)	SURFACE(S)
01 - RCA Room Components	P01 (1/2" spoolpiece between valves WSS-A-22 & WSS-A-23) P02 (2" line at valve WSS-91) T02 (Secondary flush accumulator tank TK-98) T03 (Waste hold up tank TK-95) U01 (Dewatering pump P-123) U02 (Waste feed pump P-120)
02 - 21' Primary Auxiliary Building Components	T01 (Primary water flush tank TK-80)

REASON(S) CHARACTERIZATION SURVEY (C01)

MATERIALS

MAT'L CODE	MATERIAL DESCRIPTION	BETA BKGD (dpm/100 cm²)
G0031	METAL - BARE (GAMMA)	0.0

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Exposure Rate Measurements

Survey Package C0200 SYSTEMS

Waste Solidification System

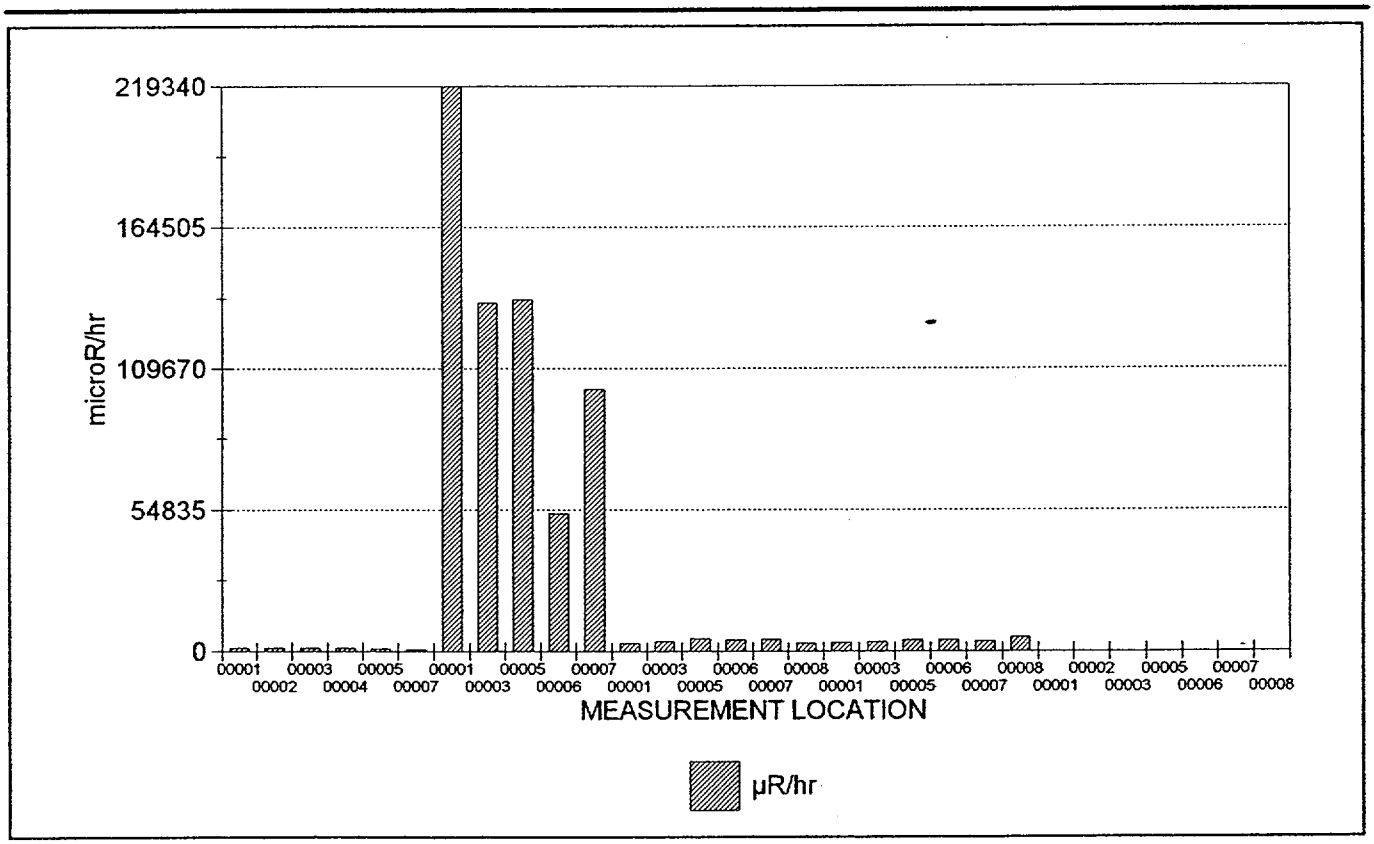
STATISTICAL SUMMARY

	µR/hr
Mean	23,333.2
Maximum	219,339.5
Minimum	12.7
Standard Deviation	53,199.1

Samples Reported	30
Samples Prescribed	30

TESTS PERFORMED

Samples reported satisfy samples prescribed	YES



30 RESULTS ARE GRAPHED

04/14/98 Exposure Rate Measurements

Survey Package : C0200 SYSTEMS

Waste Solidification System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
545 (2)	01	T02	G0031	C01	60.00	00001	***1179.4***
545 (2)	01	T02	G0031	C01	60.00	00002	***1246.3***
545 (2)	01	T02	G0031	C01	60.00	00003	***1117.5***
545 (2)	01	T02	G0031	C01	60.00	00004	***1341.0***
545 (2)	01	T02	G0031	C01	60.00	00005	***1029.5***
545 (2)	01	T02	G0031	C01	60.00	00007	***820.3***
530 (2)	01	T03	G0031	C01	0.00	00001	***219339.5***
530 (2)	01	T03	G0031	C01	0.00	00003	***135314.5***
530 (2)	01	T03	G0031	C01	0.00	00005	***136557.2***
530 (2)	01	T03	G0031	C01	0.00	00006	***53301.5***
530 (2)	01	T03	G0031	C01	0.00	00007	***101489.8***
530 (2)	01	U01	G0031	C01	0.00	00001	***3064.3***
530 (2)	01	U01	G0031	C01	0.00	00003	***3612.4***
530 (2)	01	U01	G0031	C01	0.00	00005	***4690.0***
530 (2)	01	U01	G0031	C01	0.00	00006	***4282.6***
530 (2)	01	U01	G0031	C01	0.00	00007	***4470.2***
530 (2)	01	U01	G0031	C01	0.00	00008	***3017.0***
530 (2)	01	U02	G0031	C01	0.00	00001	***3101.2***
530 (2)	01	U02	G0031	C01	0.00	00003	***3461.6***
530 (2)	01	U02	G0031	C01	0.00	00005	***4300.0***
530 (2)	01	U02	G0031	C01	0.00	00006	***4259.2***
530 (2)	01	U02	G0031	C01	0.00	00007	***3742.4***
530 (2)	01	U02	G0031	C01	0.00	00008	***5143.5***
545 (2)	02	T01	G0031	C01	60.00	00001	13.2
545 (2)	02	T01	G0031	C01	60.00	00002	***16.9***
545 (2)	02	T01	G0031	C01	60.00	00003	12.7
545 (2)	02	T01	G0031	C01	60.00	00005	***15.2***
545 (2)	02	T01	G0031	C01	60.00	00006	***20.5***
545 (2)	02	T01	G0031	C01	60.00	00007	***16.1***
545 (2)	02	T01	G0031	C01	60.00	00008	***20.8***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.
30 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DOWNLOAD FILE & SURVEY INSTRUMENTATION CALIBRATION SUMMARY

04/14/98

Exposure Rate Measurements

Survey Package : C0200 SYSTEMS

Waste Solidification System

SURVEY DATE	FILE #	M2350 INST S/N	M2350 CAL DUE	DETECTOR MODEL	DETECTOR S/N	DETECTOR CAL DUE	TECHNICIAN
2/3/98	530 (2)	095348	3/20/98	44-38	088919	7/23/98	MAP5535
						CALIBRATION DATES VERIFIED AS ACCEPTABLE	
2/4/98	545 (2)	126182	3/22/98	44-2	128338	4/19/98	MAP5535
						CALIBRATION DATES VERIFIED AS ACCEPTABLE	

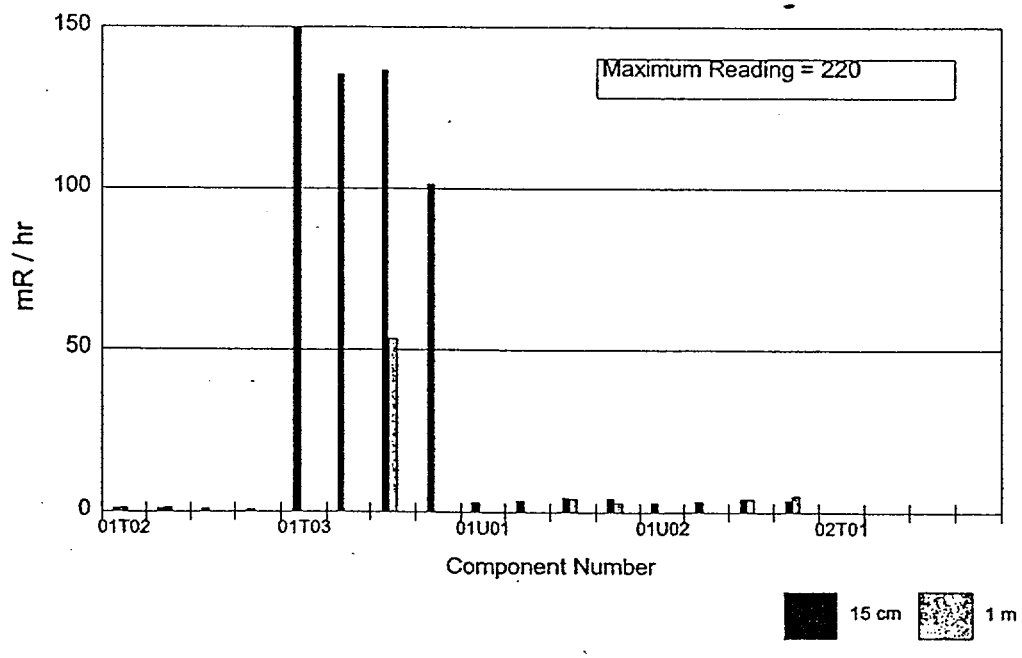
Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

SURVEY PACKAGE C0200

Package Number	Component Number	Component Description	Direction	15 cm mR/hr	1 meter mR/hr	Ratio of 15 cm to 1 meter
C0200	01T02	Secondary flush accumulator tank TK-98	North	1.2	1.2	0.9
			East	1.1	1.3	0.8
			South	1.0	*	
			West	0.8	*	
C0200	01T03	Waste hold up tank TK-95	North	219.3	*	
			East	135.3	*	
			South	136.6	53.3	2.6
			West	101.5	*	
C0200	01U01	Dewatering pump P-123	North	3.1	*	
			East	3.6	*	
			South	4.7	4.3	1.1
			West	4.5	3.0	1.5
C0200	01U02	Waste feed pump P-120	North	3.1	*	
			East	3.5	*	
			South	4.3	4.3	1.0
			West	3.7	5.1	0.7
C0200	02T01	Primary water flush tank TK-80	North	0.0	0.0	0.8
			East	0.0	*	
			South	0.0	0.0	0.7
			West	0.0	0.0	0.8

* Measurement not collected due to interfering surface.

Exposure Rates - 15 cm and 1 meter



Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Beta Activity

Survey Package C0200 SYSTEMS

Waste Solidification System

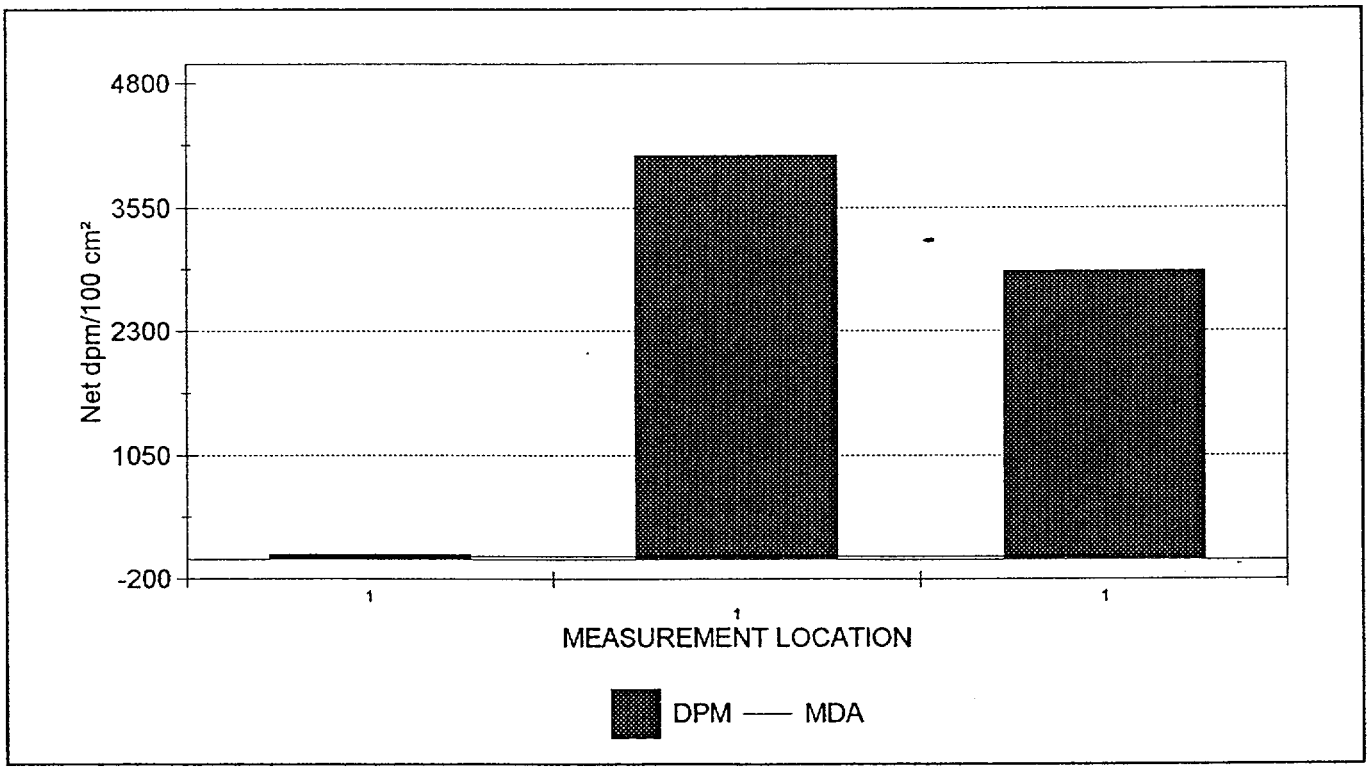
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	2,344.4
Maximum	4,072.5
Minimum	50.3
Standard Deviation	2,069.9
MDA	33.8

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <100 net dpm/100 cm²	YES
Results above 100 net dpm/100 cm²	2
Number of results above MDA	3



3 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Alpha Activity

Survey Package C0200 SYSTEMS

Waste Solidification System

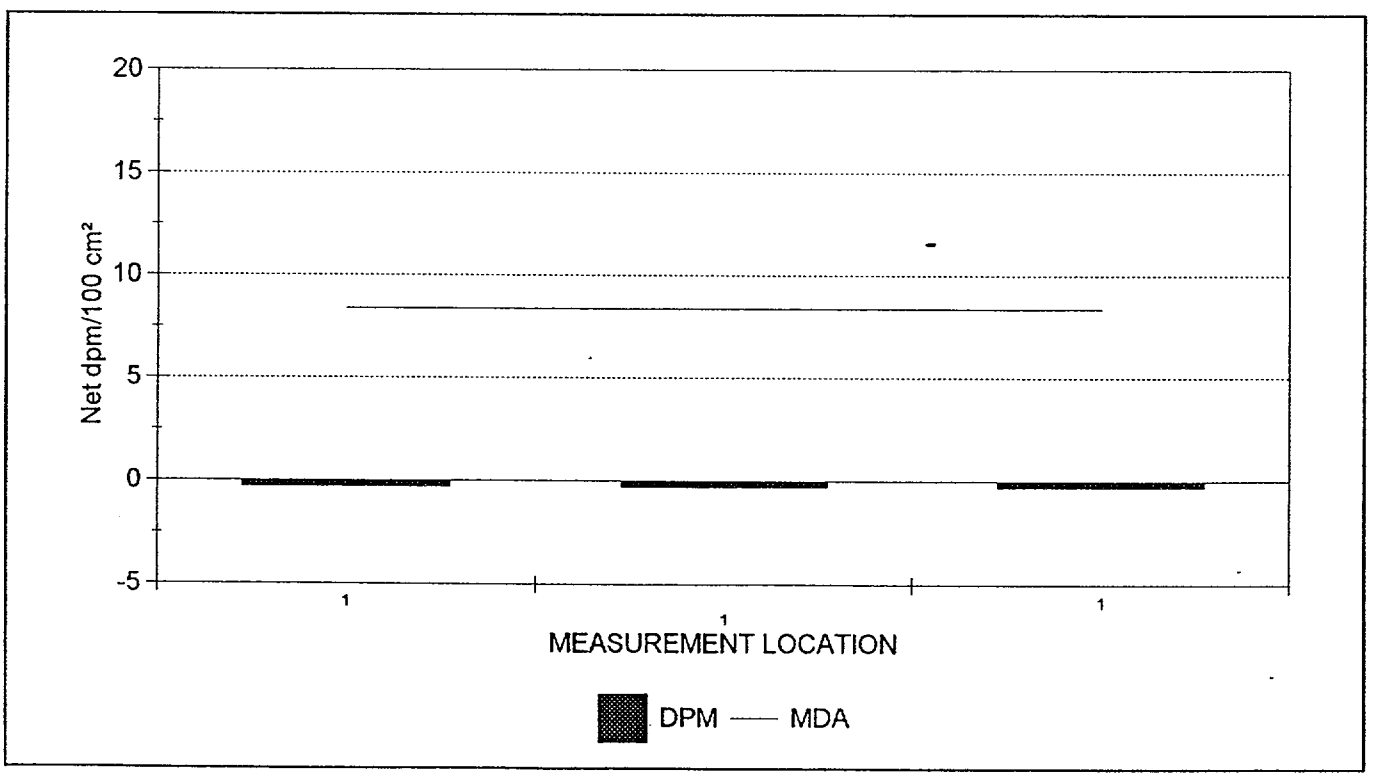
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	-0.3
Maximum	-0.3
Minimum	-0.3
Standard Deviation	0.0
MDA	8.4

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <10 net dpm/100 cm²	YES
Results above 20 net dpm/100 cm²	0
Number of results above MDA	0



3 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination

Survey Package : C0200 SYSTEMS

Waste Solidification System

RESULTS LISTING - SORTED BY SURFACE CODE

XLS FILE	UNIT	SURFACE	REASON	MSRMNT LOCATION	ALPHA	BETA
SME1E109.XLS	01	T03	C01	1	-0.3	***2,910.3***
SME1E107.XLS	01	P02	C01	1	-0.3	***4,072.5***
SME1E105.XLS	01	P01	C01	1	-0.3	50.3

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 100.00 dpm/100 cm² (beta activity) and/or 20.00 dpm/100 cm² (alpha activity).
3 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DATAFILE & ALPHA - BETA COUNTER CALIBRATION SUMMARY

04/14/98 Removable Contamination

Survey Package: C0200 SYSTEMS

Waste Solidification System

SURVEYDATE	XLS FILE	INST ID	S/N	CAL DUE	LAB TECHNICIAN
3/16/98	SME1E105.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E107.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E109.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination - Tritium Activity

Survey Package : C0200 SYSTEMS

Waste Solidification System

RESULTS LISTING - SORTED BY SURFACE CODE

SAMPLE ID	SAMPLE TYPE	UNIT	SURF	REASN	MSRMNT LOCATION	MDA	TRITIUM ACTIVITY
D26	Hoppes patch	01	P01	C01	00001	39.1	-23.7
D27	Hoppes patch	01	P02	C01	00001	39.1	11.2
D28	Hoppes patch	01	P03	C01	00001	39.1	***1,212.2***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 75 dpm/100 cm²,
Italic values exceed 100 dpm/100 cm².

Maine Yankee Atomic Power Plant Site Characterization

LIQUID SCINTILLATION COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination - Tritium Activity

Survey Package : C0200 SYSTEMS

Waste Solidification System

SURVEYDATE	INSTRUMENT	MODEL	S/N	CAL DUE	LAB TECHNICIAN
3/5/98	Packard	2750	416221	6/16/98	LDT
					CALIBRATION DATE VERIFIED AS ACCEPTABLE

Maine Yankee Atomic Power Plant Site Characterization

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98 OUTPUT BATCH SN = 862

Survey Package C0200 SYSTEMS

Waste Solidification System

UNIT : 01 SURFACE : P01 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Plant Piping (interior)
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP33	PET00051	1.0	1200	Co-57	< 52.9	52.9	0.0
				Co-60	< 67.9	67.9	0.0
				Cs-134	< 69.4	69.4	0.0
				Cs-137	< 84.1	84.1	0.0
				K-40	< 899.0	899.0	0.0
				Mn-54	< 76.6	76.6	0.0

UNIT : 01 SURFACE : P02 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Plant Piping (interior)
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP34	PET00052	1.0	1200	Co-57	< 261.0	261.0	0.0
				Co-60	42700.00	271.0	1,950.0
				Cs-134	10500.00	378.0	542.0
				Cs-137	88300.00	563.0	5,700.0
				K-40	< 1170.0	1,170.0	0.0
				Mn-54	< 361.0	361.0	223.0

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98 OUTPUT BATCH SN = 862

Survey Package C0200 SYSTEMS

Waste Solidification System

UNIT : 01 SURFACE : T03 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Tank
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP32	PET00050	1.0	1200	Co-57	< 66.4	66.4	0.0
				Co-60	2740.00	79.4	210.0
				Cs-134	< 116.0	116.0	0.0
				Cs-137	264.00	111.0	88.0
				K-40	< 987.0	987.0	0.0
				Mn-54	< 168.0	168.0	0.0

04/14/98

CHARACTERIZATION SUMMARY

SURVEY PACKAGE NUMBER :C0300 SYSTEMS

PACKAGE DESCRIPTION Containment Spray System

SURVEY AREA DESCRIPTION

Containment Spray System

GENERAL HISTORICAL INFORMATION (Operational history, etc.)

The Containment Spray System was designed to reduce the peak pressure in containment to less than 55 psig following a postulated Loss-of-Coolant Accident (LOCA) by spraying water into the containment atmosphere. The system was capable of removing radioactive iodine released to the containment atmosphere during a LOCA by scavenging with sodium hydroxide. The system was also designed to supply water to the suction of the High Pressure Safety Injection pumps to provide the required net positive suction head.

SUMMARY OF CHARACTERIZATION ACTIVITIES

Survey units were established for the system by building and elevation as shown in the following Summary of Survey Units. The Surface(s) listing indicates the component name, survey surface code and, where applicable, the Maine Yankee system component number.

A total of 48 exposure rate measurements were collected at 6 component locations.

Beta scan surveys and direct measurements for total beta activity were not prescribed for this survey package.

Smear samples were collected from component interior surfaces to analyze for removable alpha and beta activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable tritium activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable plant-derived radionuclide activity by gamma spectroscopy at 3 survey measurement locations indicated on the results listing report.

The survey result statistical summaries, graphs and results listings are shown in the following individual reports including calibration summaries for the instruments used for each measurement type.

CHARACTERIZATION SURVEY RESULTS

o The average and maximum exposure rate measurement results were 2.6 mR/hr and 22.9 mR/hr, respectively. The ratio of the 15 cm distance measurements to the 1 meter distance measurements ranged from 0.2 to 5.4.

o There were 3 measurements for removable beta activity above MDA (34 dpm/100cm²) and all 3 measurements were above 100 dpm/100cm². The maximum measurement result was 39,530 dpm/100cm².

o There was 1 measurement for removable alpha activity above MDA (8.4 dpm/100cm²) and 1 measurement above 20 dpm/100cm². The maximum measurement result was 24.7 dpm/100cm².

o There was 1 measurement for removable tritium activity above MDA (39 dpm/100cm²). The maximum measurement result was 47.6 dpm/100cm².

o Of the 3 samples analyzed by gamma spectroscopy, all samples indicated plant-derived radionuclide activity above MDA. The analysis of the samples indicated the presence of Co-60, Cs-134 and Cs-137.

REFERENCES (Documents, Interviews)

Maine Yankee Drawing 1150 - FM - 92 A
Operator System Training Manual, Chapter 8

SUMMARY OF SURVEY UNIT(S)

04/14/98 OUTPUT BATCH SN = 838

PACKAGE C0300 SYSTEMS

Containment Spray System

UNIT(S)	SURFACE(S)
01 - Spray Building Components	P01 (Pump P-61A discharge piping) P02 (Pump P-61B discharge piping) P03 (Pump P-61S discharge piping) U01 (Containment spray pump P-61A (pump removed)) U02 (Containment spray pump P-61S) U03 (Containment spray pump P-61B (pump is removed))
02 - Yard Components	T01 (Refueling water storage tank TK-4) T02 (Spray chemical addition tank TK-54)
03 - -2' Containment Annulus Components	K01 (Containment safeguards sump)

REASON(S) CHARACTERIZATION SURVEY (C01)

MATERIALS

MAT'L CODE	MATERIAL DESCRIPTION	BETA BKGD (dpm/100 cm²)
G0031	METAL - BARE (GAMMA)	0.0

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Exposure Rate Measurements

Survey Package C0300 SYSTEMS

Containment Spray System

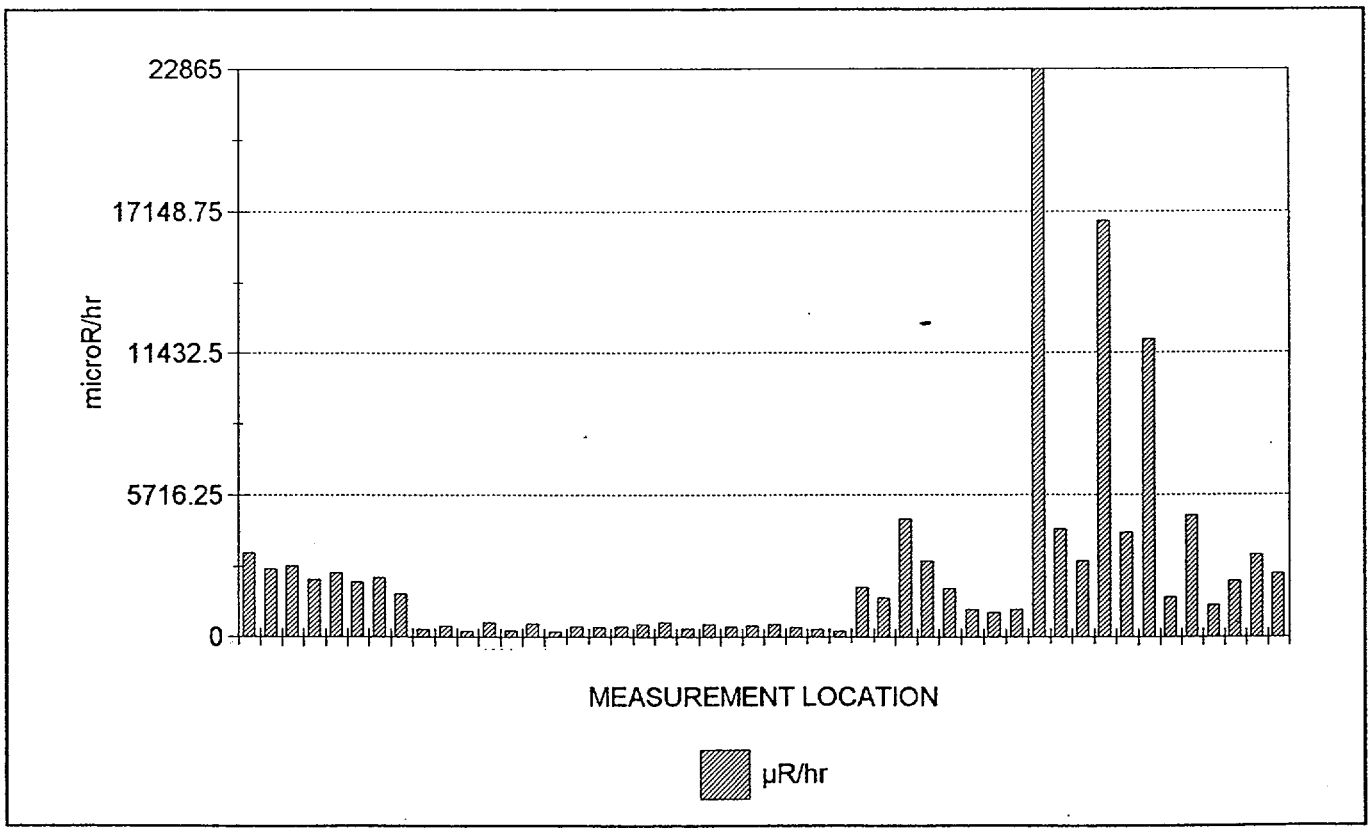
STATISTICAL SUMMARY

	µR/hr
Mean	2,592.8
Maximum	22,861.6
Minimum	201.4
Standard Deviation	4,192.2

Samples Reported	48
Samples Prescribed	48

TESTS PERFORMED

Samples reported satisfy samples prescribed	YES



48 RESULTS ARE GRAPHED

04/14/98

Exposure Rate Measurements

Survey Package : C0300 SYSTEMS

Containment Spray System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
544 (2)	01	U01	G0031	C01	60.00	00001	***454.9***
544 (2)	01	U01	G0031	C01	60.00	00002	***415.6***
544 (2)	01	U01	G0031	C01	60.00	00003	***510.0***
544 (2)	01	U01	G0031	C01	60.00	00004	***345.9***
544 (2)	01	U01	G0031	C01	60.00	00005	***586.6***
544 (2)	01	U01	G0031	C01	60.00	00006	***516.9***
544 (2)	01	U01	G0031	C01	60.00	00007	***410.6***
544 (2)	01	U01	G0031	C01	60.00	00008	***377.8***
536 (2)	01	U02	G0031	C01	0.00	00001	***1127.1***
536 (2)	01	U02	G0031	C01	0.00	00002	***1011.2***
536 (2)	01	U02	G0031	C01	0.00	00003	***1131.2***
536 (2)	01	U02	G0031	C01	0.00	00004	***1948.0***
536 (2)	01	U02	G0031	C01	0.00	00005	***3093.0***
536 (2)	01	U02	G0031	C01	0.00	00006	***4757.6***
536 (2)	01	U02	G0031	C01	0.00	00007	***1604.7***
536 (2)	01	U02	G0031	C01	0.00	00008	***2010.3***
544 (2)	01	U03	G0031	C01	60.00	00001	***408.0***
544 (2)	01	U03	G0031	C01	60.00	00002	***201.4***
544 (2)	01	U03	G0031	C01	60.00	00003	***547.3***
544 (2)	01	U03	G0031	C01	60.00	00004	***253.7***
544 (2)	01	U03	G0031	C01	60.00	00005	***585.3***
544 (2)	01	U03	G0031	C01	60.00	00006	***234.9***
544 (2)	01	U03	G0031	C01	60.00	00007	***444.7***
544 (2)	01	U03	G0031	C01	60.00	00008	***314.9***

REMAINING RESULTS PRINTED ON NEXT PAGE

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.

04/14/98 Exposure Rate Measurements

Survey Package: C0300 SYSTEMS

Containment Spray System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
536 (2)	02	T01	G0031	C01	0.00	00001	***16787.8***
536 (2)	02	T01	G0031	C01	0.00	00002	***3086.4***
536 (2)	02	T01	G0031	C01	0.00	00003	***4364.6***
536 (2)	02	T01	G0031	C01	0.00	00004	***22861.6***
536 (2)	02	T01	G0031	C01	0.00	00005	***4927.8***
536 (2)	02	T01	G0031	C01	0.00	00006	***1611.3***
536 (2)	02	T01	G0031	C01	0.00	00007	***11950.3***
536 (2)	02	T01	G0031	C01	0.00	00008	***4239.0***
536 (2)	02	T02	G0031	C01	0.00	00001	***2579.6***
536 (2)	02	T02	G0031	C01	0.00	00002	***3343.6***
544 (2)	02	T02	G0031	C01	60.00	00003	***389.6***
544 (2)	02	T02	G0031	C01	60.00	00004	***527.8***
544 (2)	02	T02	G0031	C01	60.00	00005	***241.0***
544 (2)	02	T02	G0031	C01	60.00	00006	***308.8***
536 (2)	02	T02	G0031	C01	0.00	00007	***2264.9***
536 (2)	02	T02	G0031	C01	0.00	00008	***1322.8***
582 (2)	03	K01	G0031	C01	0.00	00001	***1747.0***
582 (2)	03	K01	G0031	C01	0.00	00002	***2398.0***
582 (2)	03	K01	G0031	C01	0.00	00003	***2214.3***
582 (2)	03	K01	G0031	C01	0.00	00004	***2609.4***
582 (2)	03	K01	G0031	C01	0.00	00005	***2330.5***
582 (2)	03	K01	G0031	C01	0.00	00006	***2874.8***
582 (2)	03	K01	G0031	C01	0.00	00007	***2750.1***
582 (2)	03	K01	G0031	C01	0.00	00008	***3430.0***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.
48 results are listed.

DOWNLOAD FILE & SURVEY INSTRUMENTATION CALIBRATION SUMMARY

04/14/98

Exposure Rate Measurements

Survey Package : C0300 SYSTEMS

Containment Spray System

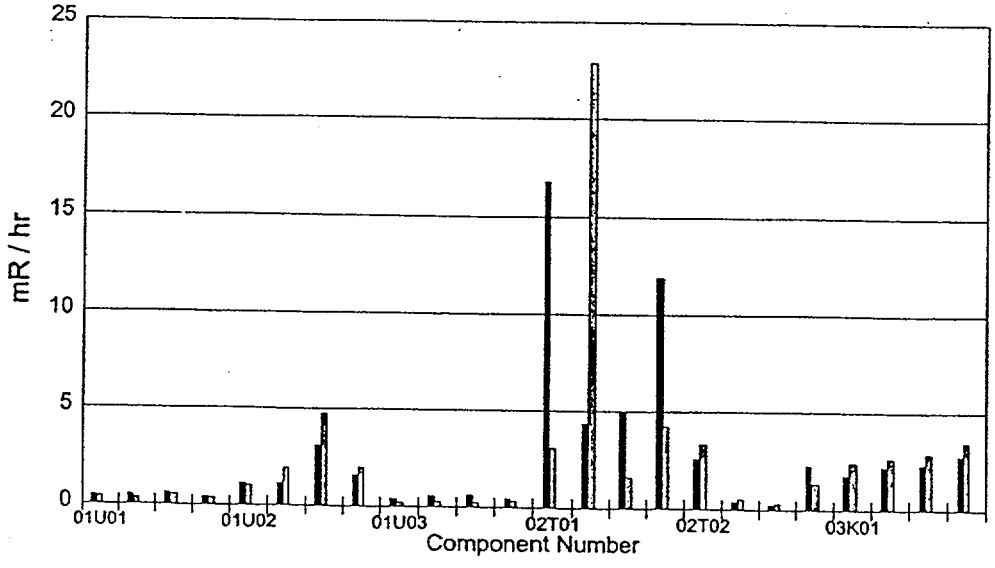
SURVEY		M2350		DETECTOR			
DATE	FILE #	INST S/N	CAL DUE	MODEL	S/N	CAL DUE	TECHNICIAN
2/4/98	536 (2)	126185	3/20/98	44-38	075082	7/23/98	JFM0682
							CALIBRATION DATES VERIFIED AS ACCEPTABLE
2/4/98	544 (2)	126197	3/22/98	44-2	PR126922	4/19/98	JFM0682
							CALIBRATION DATES VERIFIED AS ACCEPTABLE
2/10/98	582 (2)	095348	3/20/98	44-38	088919	7/23/98	JFM0682
							CALIBRATION DATES VERIFIED AS ACCEPTABLE

Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

SURVEY PACKAGE C0300

Package Number	Component Number	Component Description	Direction	15 cm mR/hr	1 meter mR/hr	Ratio of 15 cm to 1 meter
C0300	01U01	Containment spray pump P-61A (pump removed)	North	0.5	0.4	1.1
			East	0.5	0.3	1.5
			South	0.6	0.5	1.1
			West	0.4	0.4	1.1
C0300	01U02	Containment spray pump P-61S	North	1.1	1.0	1.1
			East	1.1	1.9	0.6
			South	3.1	4.8	0.7
			West	1.6	2.0	0.8
C0300	01U03	Containment spray pump P-61B (pump is removed)	North	0.4	0.2	2.0
			East	0.5	0.3	2.2
			South	0.6	0.2	2.5
			West	0.4	0.3	1.4
C0300	02T01	Refueling water storage tank TK-4	North	16.8	3.1	5.4
			East	4.4	22.9	0.2
			South	4.9	1.6	3.1
			West	12.0	4.2	2.8
C0300	02T02	Spray chemical addition tank TK-54	North	2.6	3.3	0.8
			East	0.4	0.5	0.7
			South	0.2	0.3	0.8
			West	2.3	1.3	1.7
C0300	03K01	Containment safeguards sump	North	1.7	2.4	0.7
			East	2.2	2.6	0.8
			South	2.3	2.9	0.8
			West	2.8	3.4	0.8

Exposure Rates - 15 cm and 1 meter



Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Beta Activity

Survey Package C0300 SYSTEMS

Containment Spray System

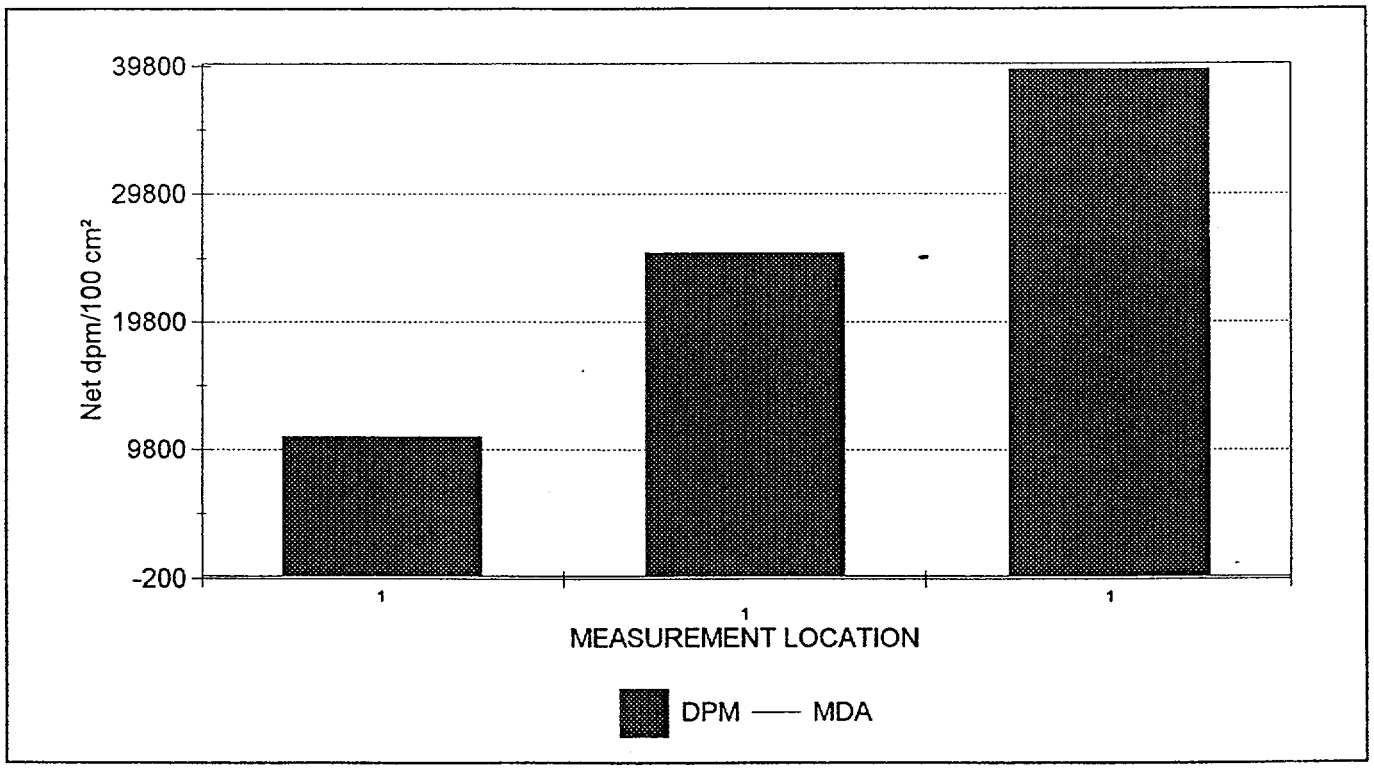
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	25,185.4
Maximum	39,529.8
Minimum	10,796.4
Standard Deviation	14,366.8
MDA	33.8

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <100 net dpm/100 cm²	YES
Results above 100 net dpm/100 cm²	3
Number of results above MDA	3



3 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Alpha Activity

Survey Package C0300 SYSTEMS

Containment Spray System

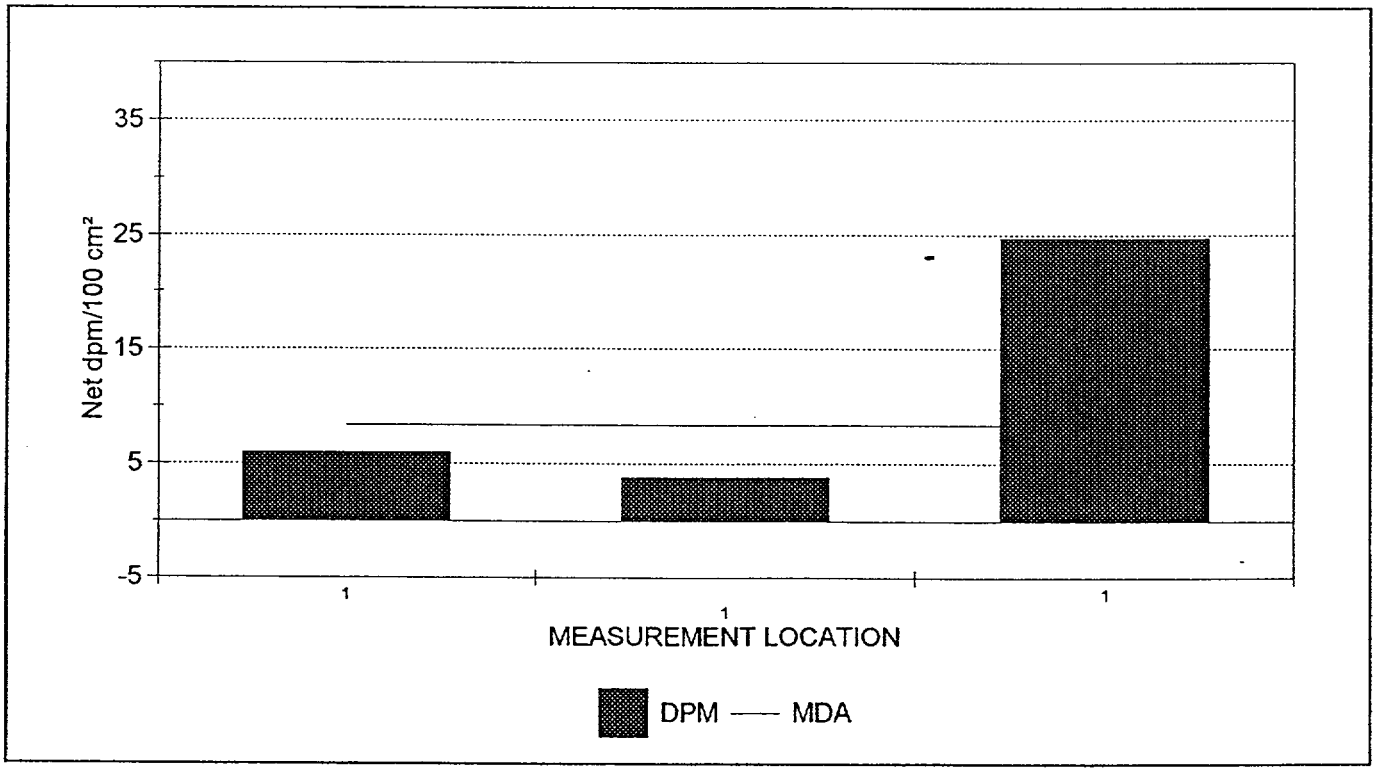
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	11.5
Maximum	24.7
Minimum	3.9
Standard Deviation	11.5
MDA	8.4

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <10 net dpm/100 cm²	YES
Results above 20 net dpm/100 cm²	1
Number of results above MDA	1



3 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination

Survey Package : C0300 SYSTEMS

Containment Spray System

RESULTS LISTING - SORTED BY SURFACE CODE

XLS FILE	UNIT	SURFACE	REASON	MSRMNT LOCATION	ALPHA	BETA
SME1E111.XLS	01	P03	C01	1	***24.7***	***39,529.8***
SME1E113.XLS	01	P02	C01	1	3.9	***25,230.1***
SME1E115.XLS	01	P01	C01	1	6.0	***10,796.4***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 100.00 dpm/100 cm² (beta activity) and/or 20.00 dpm/100 cm² (alpha activity).
3 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DATAFILE & ALPHA - BETA COUNTER CALIBRATION SUMMARY

04/14/98 Removable Contamination

Survey Package : C0300 SYSTEMS

Containment Spray System

SURVEYDATE	XLS FILE	INST ID	S/N	CAL DUE	LAB TECHNICIAN
3/16/98	SME1E111.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E113.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E115.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination - Tritium Activity

Survey Package: C0300 SYSTEMS

Containment Spray System

RESULTS LISTING - SORTED BY SURFACE CODE

SAMPLE ID	SAMPLE TYPE	UNIT	SURF	REASN	MSRMNT LOCATION	MDA	TRITIUM ACTIVITY
D29	Hoppes patch	01	P01	C01	00001	39.1	-6.4
D30	Hoppes patch	01	P02	C01	00001	38.8	47.6
D31	Hoppes patch	01	P03	C01	00001	39.0	14.0

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 75 dpm/100 cm²,
Italic values exceed 100 dpm/100 cm².

Maine Yankee Atomic Power Plant Site Characterization

LIQUID SCINTILLATION COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination - Tritium Activity

Survey Package : C0300 SYSTEMS

Containment Spray System

SURVEYDATE	INSTRUMENT	MODEL	S/N	CAL DUE	LAB TECHNICIAN
3/5/98	Packard	2750	416221	6/16/98	LDT
					CALIBRATION DATE VERIFIED AS ACCEPTABLE

Maine Yankee Atomic Power Plant Site Characterization

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98 OUTPUT BATCH SN = 838

Survey Package C0300 SYSTEMS

Containment Spray System

UNIT : 01 SURFACE : P01 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Plant Piping (interior)
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP35	PET00053	1.0	1200	Co-57	< 65.2	65.2	0.0
				Co-60	1070.00	66.5	117.0
				Cs-134	< 139.0	139.0	0.0
				Cs-137	1640.00	116.0	197.0
				K-40	< 610.0	610.0	0.0
				Mn-54	< 117.0	117.0	0.0

UNIT : 01 SURFACE : P02 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Plant Piping (interior)
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP36	PET00054	1.0	1200	Co-57	< 0.0	0.0	0.0
				Co-60	2690.00	0.0	207.0
				Cs-134	137.00	0.0	86.8
				Cs-137	1850.00	0.0	214.0
				K-40	< 0.0	0.0	0.0
				Mn-54	< 0.0	0.0	0.0

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98 OUTPUT BATCH SN = 838

Survey Package C0300 SYSTEMS

Containment Spray System

UNIT : 01 SURFACE : P03 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Plant Piping (interior)
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYD087	PET00024	1.0	1200	Co-57	< 96.6	96.6	0.0
				Co-60	10900.00	178.0	606.0
				Cs-134	< 257.0	257.0	0.0
				Cs-137	1310.00	333.0	258.0
				K-40	< 849.0	849.0	0.0
				Mn-54	< 305.0	305.0	0.0

Version 3.0.8 - 4/3/98

JLM

DBACORR Documentation
:aProgDBACORR:R_GSPEC.RSL

04/14/98

CHARACTERIZATION SUMMARY

SURVEY PACKAGE NUMBER :C0400 SYSTEMS

PACKAGE DESCRIPTION Emergency Core Cooling System

SURVEY AREA DESCRIPTION

Emergency Core Cooling System

GENERAL HISTORICAL INFORMATION (Operational history, etc.)

The Emergency Core Cooling System was designed to inject borated water to cool the reactor core in the event of a Loss-Of- Coolant Accident (LOCA). The injected borated water would have provided negative reactivity in the event of a Steam Line Rupture (SLR) accident and post-accident core cooling.

SUMMARY OF CHARACTERIZATION ACTIVITIES

Survey units were established for the system by building and elevation as shown in the following Summary of Survey Units. The Surface(s) listing indicates the component name, survey surface code and, where applicable, the Maine Yankee system component number.

A total of 56 exposure rate measurements were collected at 7component locations.

Beta scan surveys and direct measurements for total beta activity were not prescribed for this survey package.

Smear samples were collected from component interior surfaces to analyze for removable alpha and beta activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable tritium activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable plant-derived radionuclide activity by gamma spectroscopy at 3 survey measurement locations indicated on the results listing report.

The survey result statistical summaries, graphs and results listings are shown in the following individual reports including calibration summaries for the instruments used for each measurement type.

CHARACTERIZATION SURVEY RESULTS

o The average and maximum exposure rate measurement results were 4.4 mR/hr and 34.7 mR/hr, respectively. The ratio of the 15 cm distance measurements to the 1 meter distance measurements ranged from 0.2 to 2.8.

o There were 3 measurements for removable beta activity above MDA (maximum MDA was 5,000 dpm/100cm^2). The maximum measurement result was 200,000 dpm/100cm^2.

o 2 of the 3 smear measurements were analyzed for removable alpha activity and no measurements were above MDA (8.4 dpm/100cm^2).

o There were 2 measurements for removable tritium activity above MDA (maximum MDA was 139 dpm/100cm^2). The maximum measurement result was 3,597 dpm/100cm^2.

o Of the 3 samples analyzed by gamma spectroscopy, all samples indicated plant-derived radionuclide activity above MDA. The analysis of the samples indicated the presence of Co-60, Cs-134, Cs-137 and Mn-54.

REFERENCES (Documents, Interviews)

Maine Yankee Drawing 1150 - FM - 91 B, 92 A
Operator System Training Manual, Chapter 6

Maine Yankee Atomic Power Plant Site Characterization

SUMMARY OF SURVEY UNIT(S)

04/14/98 OUTPUT BATCH SN = 839

PACKAGE C0400 SYSTEMS

Emergency Core Cooling System

UNIT(S)	SURFACE(S)
01 - 11' Primary Auxiliary Building Components	U01 (Auxiliary charging pump P-7)
02 - 21' Primary Auxiliary Building Components	U01 (HPSI pump P-14A) U02 (HPSI pump P-14B) V01 (Valve CH-10) V02 (Valve HSI-S-46)
03 - Spray Building Components	U01 (LPSI pump P-12B) V01 (Valve LSI-56)
04 - -2' Containment Building Components	T01 (Safety injection tank TK-53-1 (loop 1)) T02 (Safety injection tank TK-53-2 (loop 2)) T03 (Safety injection tank TK-53-3 (loop 3))

REASON(S) CHARACTERIZATION SURVEY (C01)

MATERIALS

MAT'L CODE	MATERIAL DESCRIPTION	BETA BKGD (dpm/100 cm²)
G0031	METAL - BARE (GAMMA)	0.0

DURATEK

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Exposure Rate Measurements

Survey Package C0400 SYSTEMS

Emergency Core Cooling System

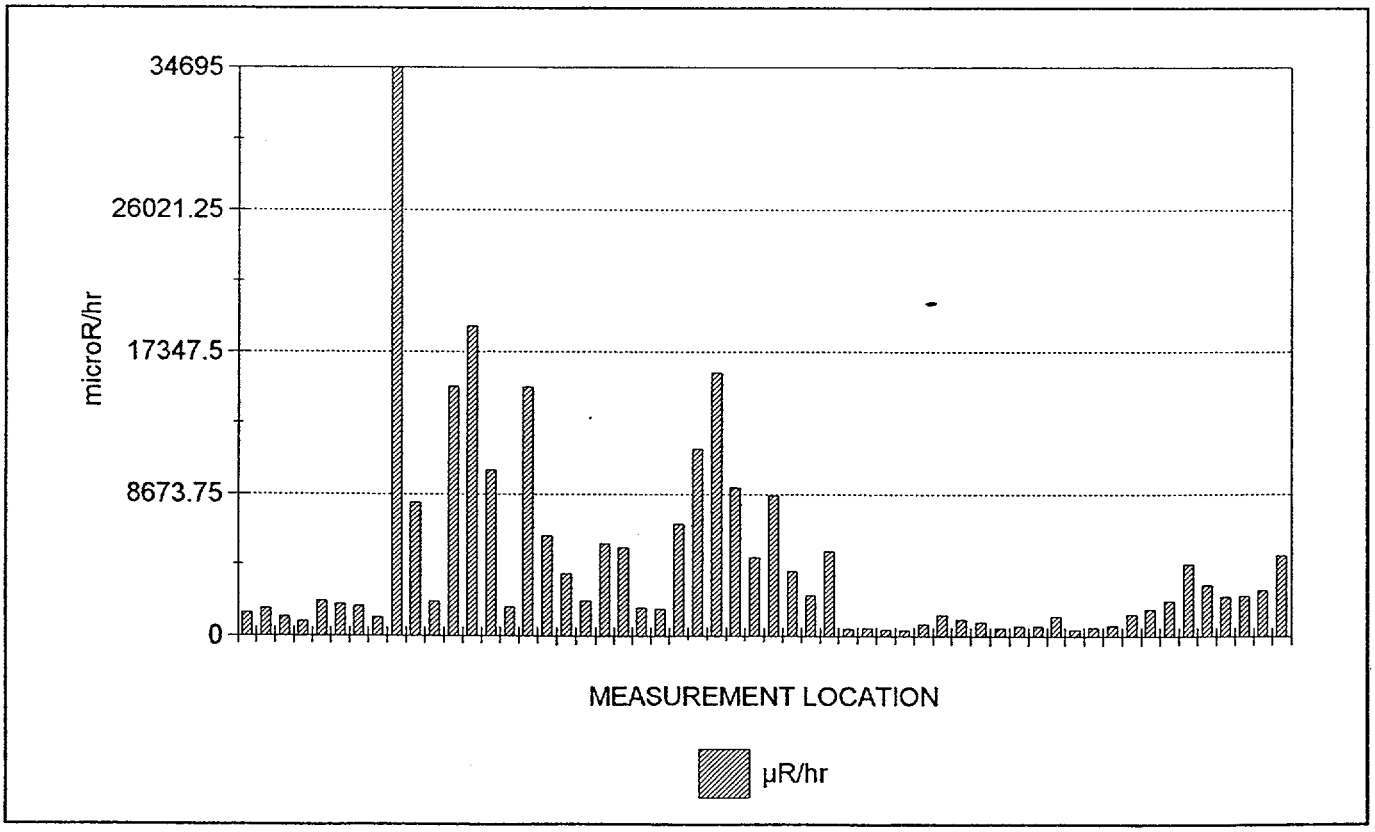
STATISTICAL SUMMARY

	µR/hr
Mean	4,416.1
Maximum	34,690.7
Minimum	369.6
Standard Deviation	6,025.6

Samples Reported	56
Samples Prescribed	56

TESTS PERFORMED

Samples reported satisfy samples prescribed	YES



56 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Exposure Rate Measurements

Survey Package : C0400 SYSTEMS

Emergency Core Cooling System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
531 (2)	01	U01	G0031	C01	60.00	00001	***615.9***
531 (2)	01	U01	G0031	C01	60.00	00002	***576.6***
531 (2)	01	U01	G0031	C01	60.00	00003	***512.3***
531 (2)	01	U01	G0031	C01	60.00	00004	***590.0***
531 (2)	01	U01	G0031	C01	60.00	00005	***406.4***
531 (2)	01	U01	G0031	C01	60.00	00006	***479.0***
531 (2)	01	U01	G0031	C01	60.00	00007	***1166.3***
530 (2)	01	U01	G0031	C01	0.00	00008	***1280.7***
531 (2)	02	U01	G0031	C01	60.00	00001	***823.5***
531 (2)	02	U01	G0031	C01	60.00	00002	***369.6***
531 (2)	02	U01	G0031	C01	60.00	00003	***968.9***
531 (2)	02	U01	G0031	C01	60.00	00004	***390.1***
531 (2)	02	U01	G0031	C01	60.00	00005	***1255.6***
531 (2)	02	U01	G0031	C01	60.00	00006	***451.9***
531 (2)	02	U01	G0031	C01	60.00	00007	***697.6***
531 (2)	02	U01	G0031	C01	60.00	00008	***447.5***
530 (2)	02	U02	G0031	C01	0.00	00001	***4895.7***
530 (2)	02	U02	G0031	C01	0.00	00002	***3079.1***
530 (2)	02	U02	G0031	C01	0.00	00003	***2783.9***
530 (2)	02	U02	G0031	C01	0.00	00004	***4329.4***
530 (2)	02	U02	G0031	C01	0.00	00005	***2409.4***
530 (2)	02	U02	G0031	C01	0.00	00006	***2128.5***
530 (2)	02	U02	G0031	C01	0.00	00007	***2397.0***
530 (2)	02	U02	G0031	C01	0.00	00008	***1602.6***
668 (2)	03	U01	G0031	C01	0.00	00001	***1089.0***
668 (2)	03	U01	G0031	C01	0.00	00002	871.7
668 (2)	03	U01	G0031	C01	0.00	00003	***1799.0***
668 (2)	03	U01	G0031	C01	0.00	00004	***1147.9***
668 (2)	03	U01	G0031	C01	0.00	00005	***1930.5***
668 (2)	03	U01	G0031	C01	0.00	00006	***1656.8***
668 (2)	03	U01	G0031	C01	0.00	00007	***2127.5***
668 (2)	03	U01	G0031	C01	0.00	00008	***1387.0***
666 (2)	04	T01	G0031	C01	0.00	00001	***5175.6***
666 (2)	04	T01	G0031	C01	0.00	00002	***4761.0***
666 (2)	04	T01	G0031	C01	0.00	00003	***2465.8***
666 (2)	04	T01	G0031	C01	0.00	00004	***9093.9***
666 (2)	04	T01	G0031	C01	0.00	00005	***3903.4***
666 (2)	04	T01	G0031	C01	0.00	00006	***16037.2***
666 (2)	04	T01	G0031	C01	0.00	00007	***8594.7***
666 (2)	04	T01	G0031	C01	0.00	00008	***11478.8***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.

04/14/98

Exposure Rate Measurements

Survey Package : C0400 SYSTEMS

Emergency Core Cooling System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
666 (2)	04	T02	G0031	C01	0.00	00001	***6802.5***
666 (2)	04	T02	G0031	C01	0.00	00002	***5630.7***
666 (2)	04	T02	G0031	C01	0.00	00003	***1620.5***
666 (2)	04	T02	G0031	C01	0.00	00004	***2116.9***
666 (2)	04	T02	G0031	C01	0.00	00005	***1663.6***
666 (2)	04	T02	G0031	C01	0.00	00006	***3751.0***
666 (2)	04	T02	G0031	C01	0.00	00007	***5411.6***
666 (2)	04	T02	G0031	C01	0.00	00008	***6088.2***
666 (2)	04	T03	G0031	C01	0.00	00001	***15176.1***
666 (2)	04	T03	G0031	C01	0.00	00002	***15198.9***
666 (2)	04	T03	G0031	C01	0.00	00003	***1712.3***
666 (2)	04	T03	G0031	C01	0.00	00004	***2078.2***
666 (2)	04	T03	G0031	C01	0.00	00005	***10133.1***
666 (2)	04	T03	G0031	C01	0.00	00006	***8192.1***
666 (2)	04	T03	G0031	C01	0.00	00007	***18855.4***
666 (2)	04	T03	G0031	C01	0.00	00008	***34690.7***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.
56 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DOWNLOAD FILE & SURVEY INSTRUMENTATION CALIBRATION SUMMARY

04/14/98

Exposure Rate Measurements

Survey Package : C0400 SYSTEMS

Emergency Core Cooling System

SURVEY		M2350		DETECTOR			
DATE	FILE #	INST S/N	CAL DUE	MODEL	S/N	CAL DUE	TECHNICIAN
2/3/98	530 (2)	095348	3/20/98	44-38	088919	7/23/98	MAP5535
						CALIBRATION DATES VERIFIED AS ACCEPTABLE	
2/3/98	531 (2)	126182	3/22/98	44-2	128338	4/19/98	MAP5535
						CALIBRATION DATES VERIFIED AS ACCEPTABLE	
3/18/98	666 (2)	126185	3/20/98	44-38	075082	7/23/98	AOK2982
						CALIBRATION DATES VERIFIED AS ACCEPTABLE	
3/18/98	668 (2)	95348	3/20/98	44-38	088919	7/23/98	AOK2982
						CALIBRATION DATES VERIFIED AS ACCEPTABLE	

Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

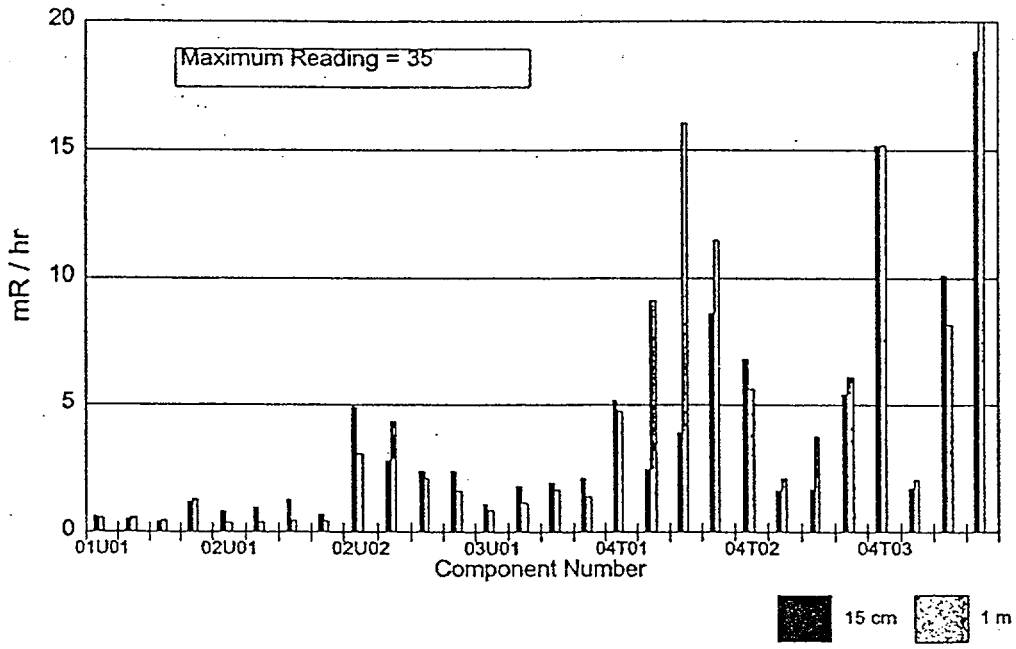
SURVEY PACKAGE C0400

Package Number	Component Number	Component Description	Direction	15 cm mR/hr	1 meter mR/hr	Ratio of 15 cm to 1 meter
C0400	01U01	Auxiliary charging pump P-7	North	0.6	0.6	1.1
			East	0.5	0.6	0.9
			South	0.4	0.5	0.8
			West	1.2	1.3	0.9
C0400	02U01	HPSI pump P-14A	North	0.8	0.4	2.2
			East	1.0	0.4	2.5
			South	1.3	0.5	2.8
			West	0.7	0.4	1.6
C0400	02U02	HPSI pump P-14B	North	4.9	3.1	1.6
			East	2.8	4.3	0.6
			South	2.4	2.1	1.1
			West	2.4	1.6	1.5
C0400	03U01	LPSI pump P-12B	North	1.1	0.9	1.2
			East	1.8	1.1	1.6
			South	1.9	1.7	1.2
			West	2.1	1.4	1.5
C0400	04T01	Safety injection tank TK-53-1 (loop 1)	North	5.2	4.8	1.1
			East	2.5	9.1	0.3
			South	3.9	16.0	0.2
			West	8.6	11.5	0.7
C0400	04T02	Safety injection tank TK-53-2 (loop 2)	North	6.8	5.6	1.2
			East	1.6	2.1	0.8
			South	1.7	3.8	0.4
			West	5.4	6.1	0.9
C0400	04T03	Safety injection tank TK-53-3 (loop 3)	North	15.2	15.2	1.0
			East	1.7	2.1	0.8
			South	10.1	8.2	1.2
			West	18.9	34.7	0.5

Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

SURVEY PACKAGE C0400

Exposure Rates - 15 cm and 1 meter



Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Beta Activity

Survey Package C0400 SYSTEMS

Emergency Core Cooling System

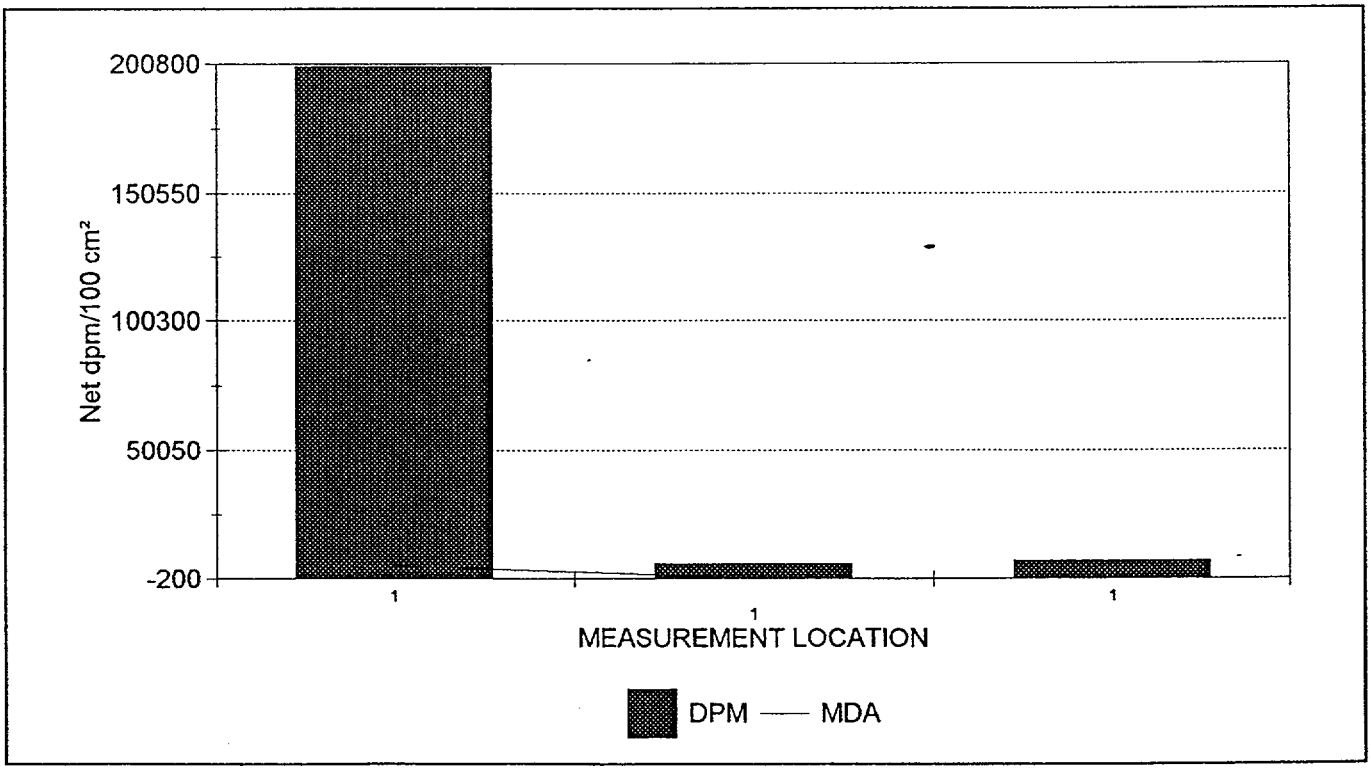
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	70,933.3
Maximum	200,000.0
Minimum	5,873.7
Standard Deviation	111,776.3
MDA	5,000.0

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <100 net dpm/100 cm²	NO
Results above 100 net dpm/100 cm²	3
Number of results above MDA	3



3 RESULTS ARE GRAPHED

DURATEK

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Alpha Activity

Survey Package C0400 SYSTEMS

Emergency Core Cooling System

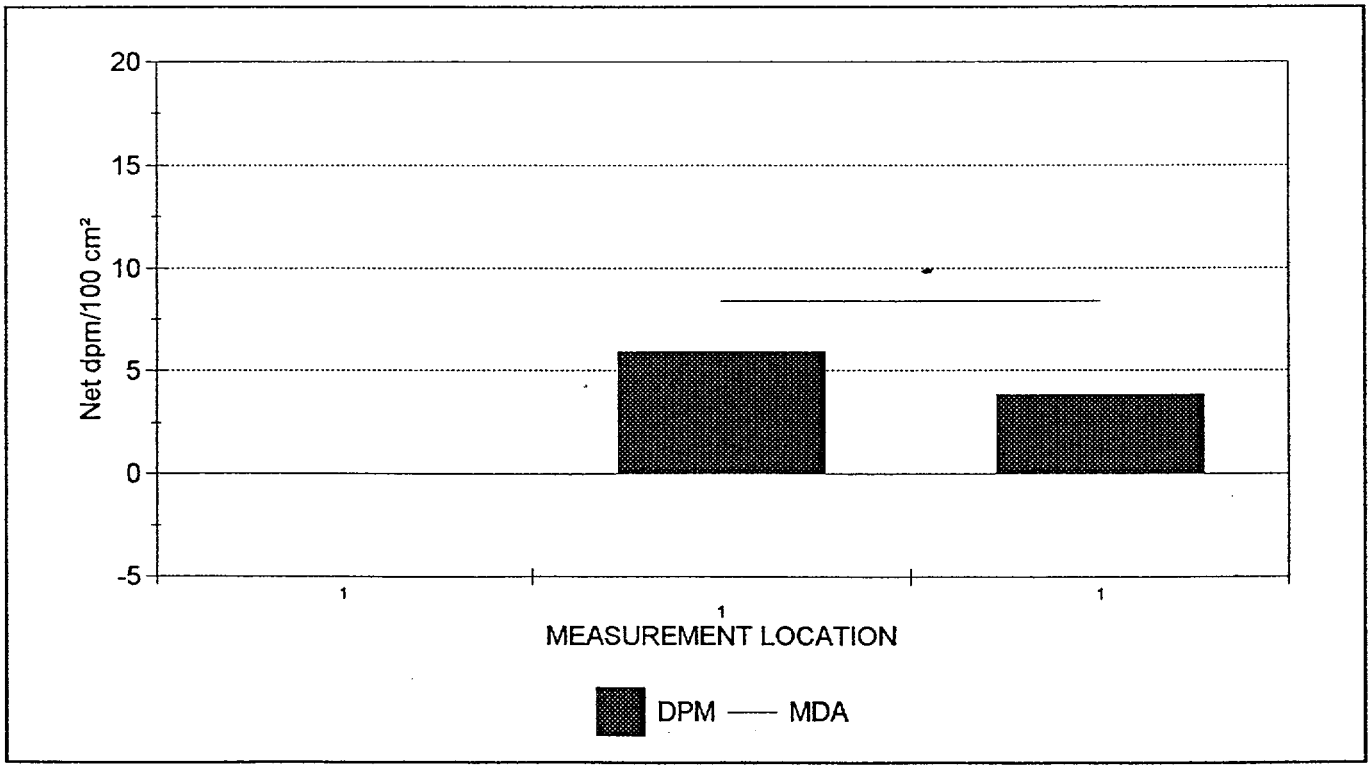
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	3.3
Maximum	5.9
Minimum	
Standard Deviation	3.0
MDA	8.4

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <10 net dpm/100 cm²	YES
Results above 20 net dpm/100 cm²	0
Number of results above MDA	0



3 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination

Survey Package : C0400 SYSTEMS

Emergency Core Cooling System

RESULTS LISTING - SORTED BY SURFACE CODE

XLS FILE	UNIT	SURFACE	REASON	MSRMNT LOCATION	ALPHA	BETA
SME1E119.XLS	03	V01	C01	1	3.9	***6,926.4***
SME1E117.XLS	02	V02	C01	1	6.0	***5,873.7***
RM-14DATA3	02	V01	C01	1		***200,000.0***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 100.00 dpm/100 cm² (beta activity) and/or 20.00 dpm/100 cm² (alpha activity).
3 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DATAFILE & ALPHA - BETA COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination

Survey Package : C0400 SYSTEMS

Emergency Core Cooling System

SURVEYDATE	XLS FILE	INST ID	S/N	CAL DUE	LAB TECHNICIAN
3/28/98	RM-14DATA3	3	8263	5/26/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E117.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E119.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination - Tritium Activity

Survey Package : C0400 SYSTEMS

Emergency Core Cooling System

RESULTS LISTING - SORTED BY SURFACE CODE

SAMPLE ID	SAMPLE TYPE	UNIT	SURF	REASN	MSRMNT LOCATION	MDA	TRITIUM ACTIVITY
D32	Hoppes patch	03	V01	C01	00001	38.9	-5.2
D62	Hoppes patch	02	V01	C01	00001	138.9	***3,596.9***
D63	Hoppes patch	02	V02	C01	00001	138.9	***542.1***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 75 dpm/100 cm²,
Italic values exceed 100 dpm/100 cm².

Maine Yankee Atomic Power Plant Site Characterization

LIQUID SCINTILLATION COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination - Tritium Activity

Survey Package : C0400 SYSTEMS

Emergency Core Cooling System

SURVEYDATE	INSTRUMENT	MODEL	S/N	CAL DUE	LAB TECHNICIAN
3/5/98	Packard	2750	416221	6/16/98	LDT
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
4/6/98	Packard	2750	416221	6/16/98	LDT
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	

Maine Yankee Atomic Power Plant Site Characterization

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98 OUTPUT BATCH SN = 839

Survey Package C0400 SYSTEMS

Emergency Core Cooling System

UNIT : 02 SURFACE : V01 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP20	PET00037	1.0	1200	Co-57	< 261.0	261.0	0.0
				Co-60	45000.00	499.0	6,330.0
				Cs-134	< 609.0	609.0	0.0
				Cs-137	< 788.0	788.0	0.0
				K-40	< 1450.0	1,450.0	0.0
				Mn-54	2260.00	849.0	548.0

UNIT : 02 SURFACE : V02 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP19	PET00025	1.0	1200	Co-57	< 54.3	54.3	0.0
				Co-60	1360.00	66.5	147.0
				Cs-134	< 83.1	83.1	0.0
				Cs-137	< 132.0	132.0	0.0
				K-40	< 849.0	849.0	0.0
				Mn-54	< 115.0	115.0	0.0

Survey Package C0400 SYSTEMS

Emergency Core Cooling System

UNIT : 03 SURFACE : V01 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP004	PET00007	1.0	1200	Co-57	< 63.2	63.2	0.0
				Co-60	848.00	78.7	105.0
				Cs-134	337.00	97.4	66.6
				Cs-137	1610.00	72.6	267.0
				K-40	< 799.0	799.0	0.0
				Mn-54	< 92.4	92.4	0.0

04/14/98

CHARACTERIZATION SUMMARY

SURVEY PACKAGE NUMBER :C0500

SYSTEMS

PACKAGE DESCRIPTION

Residual Heat Removal System

SURVEY AREA DESCRIPTION

Residual Heat Removal System (RHR)

GENERAL HISTORICAL INFORMATION (Operational history, etc.)

The Residual Heat Removal System (RHR) reduced the temperature of the Reactor Coolant System (RCS) during cool-down operations. The RHR system was designed to reduce RCS temperature from 400 F to a refueling temperature of 125 F in 24 hours. It provided reactor coolant circulation for core decay heat removal in the cold shutdown and refueling modes.

SUMMARY OF CHARACTERIZATION ACTIVITIES

Survey units were established for the system by building and elevation as shown in the following Summary of Survey Units. The Surface(s) listing indicates the component name, survey surface code and, where applicable, the Maine Yankee system component number.

A total of 44 exposure rate measurements were collected at 6 component locations.

Beta scan surveys and direct measurements for total beta activity were not prescribed for this survey package.

Smear samples were collected from component interior surfaces to analyze for removable alpha and beta activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable tritium activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable plant-derived radionuclide activity by gamma spectroscopy at 3 survey measurement locations indicated on the results listing report.

The survey result statistical summaries, graphs and results listings are shown in the following individual reports including calibration summaries for the instruments used for each measurement type.

CHARACTERIZATION SURVEY RESULTS

o The average and maximum exposure rate measurement results were 4.9 mR/hr and 15.8 mR/hr, respectively. The ratio of the 15 cm distance measurements to the 1 meter distance measurements ranged from 0.9 to 2.6.

o There were 3 measurements for removable beta activity above MDA (maximum MDA was 5,000 dpm/100cm^2). The maximum measurement result was 180,000 dpm/100cm^2.

o None of the 3 smear measurements were analyzed for removable alpha activity.

o There were 2 measurements for removable tritium activity above MDA (138.9 dpm/100cm^2). The maximum measurement result was 58,475 dpm/100cm^2.

o Of the 3 samples analyzed by gamma spectroscopy, all samples indicated plant-derived radionuclide activity above MDA. The analysis of the samples indicated the presence of Co-58, Co-60, and Sb-125.

REFERENCES (Documents, Interviews)

Maine Yankee Drawing 1150 - FM - 92 A

Operator System Training Manual, Chapter 7

SUMMARY OF SURVEY UNIT(S)

04/14/98 OUTPUT BATCH SN = 840

PACKAGE C0500 SYSTEMS

Residual Heat Removal System

UNIT(S)	SURFACE(S)
01 - 21' Spray Building Components	H01 (RHR heat exchanger E-3B) H02 (RHR heat exchanger E-3A)
02 - 13' Containment Building Loop 2 Components	V01 (Valve RH-S-24)
03 - 21' Spray Building Components	V01 (Valve RH-20) V02 (Valve RH-21)
04 - 12' Spray Building Components	V01 (Valve RH-T-12) V02 (Valve RH-11) V03 (Valve LSI-S-63) V04 (Valve LSI-35)

REASON(S) CHARACTERIZATION SURVEY (C01)

MATERIALS

MAT'L CODE	MATERIAL DESCRIPTION	BETA BKGD (dpm/100 cm²)
G0031	METAL - BARE (GAMMA)	0.0

DURATEK

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Exposure Rate Measurements

Survey Package C0500 SYSTEMS

Residual Heat Removal System

STATISTICAL SUMMARY

	µR/hr
Mean	4,881.6
Maximum	15,772.4
Minimum	1,182.4
Standard Deviation	4,111.9

Samples Reported	44
Samples Prescribed	44

TESTS PERFORMED

Samples reported satisfy samples prescribed	YES

44 RESULTS ARE GRAPHED

Survey Package : C0500 SYSTEMS

Residual Heat Removal System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
668 (2)	01	H01	G0031	C01	0.00	00001	***1596.2***
668 (2)	01	H01	G0031	C01	0.00	00002	***1182.4***
668 (2)	01	H01	G0031	C01	0.00	00003	***1726.9***
668 (2)	01	H01	G0031	C01	0.00	00004	***1262.3***
668 (2)	01	H01	G0031	C01	0.00	00005	***4786.2***
668 (2)	01	H01	G0031	C01	0.00	00006	***2230.5***
668 (2)	01	H01	G0031	C01	0.00	00007	***2803.5***
668 (2)	01	H01	G0031	C01	0.00	00008	***2218.5***
668 (2)	01	H02	G0031	C01	0.00	00001	***7099.7***
668 (2)	01	H02	G0031	C01	0.00	00002	***3170.2***
668 (2)	01	H02	G0031	C01	0.00	00003	***9420.3***
668 (2)	01	H02	G0031	C01	0.00	00004	***3609.4***
668 (2)	01	H02	G0031	C01	0.00	00005	***8517.7***
668 (2)	01	H02	G0031	C01	0.00	00006	***4005.5***
668 (2)	01	H02	G0031	C01	0.00	00007	***10343.4***
668 (2)	01	H02	G0031	C01	0.00	00008	***4383.1***
668 (2)	03	V01	G0031	C01	0.00	00001	***1410.4***
668 (2)	03	V01	G0031	C01	0.00	00002	***1301.0***
668 (2)	03	V01	G0031	C01	0.00	00003	***1581.6***
668 (2)	03	V01	G0031	C01	0.00	00004	***1395.2***
668 (2)	03	V01	G0031	C01	0.00	00005	***2605.9***
668 (2)	03	V01	G0031	C01	0.00	00006	***1657.3***

REMAINING RESULTS PRINTED ON NEXT PAGE

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.

Survey Package : C0500 SYSTEMS

Residual Heat Removal System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
668 (2)	03	V02	G0031	C01	0.00	00001	***5014.7***
668 (2)	03	V02	G0031	C01	0.00	00002	***3549.9***
668 (2)	03	V02	G0031	C01	0.00	00003	***5263.8***
668 (2)	03	V02	G0031	C01	0.00	00004	***3342.5***
668 (2)	03	V02	G0031	C01	0.00	00005	***5265.4***
668 (2)	03	V02	G0031	C01	0.00	00006	***5951.8***
668 (2)	04	V01	G0031	C01	0.00	00001	***2152.7***
668 (2)	04	V01	G0031	C01	0.00	00002	***1967.6***
668 (2)	04	V01	G0031	C01	0.00	00003	***2094.7***
668 (2)	04	V01	G0031	C01	0.00	00004	***1586.3***
668 (2)	04	V01	G0031	C01	0.00	00005	***1855.2***
668 (2)	04	V01	G0031	C01	0.00	00006	***1402.6***
668 (2)	04	V01	G0031	C01	0.00	00007	***1917.5***
668 (2)	04	V01	G0031	C01	0.00	00008	***1554.4***
668 (2)	04	V02	G0031	C01	0.00	00001	***15772.4***
668 (2)	04	V02	G0031	C01	0.00	00002	***15284.8***
668 (2)	04	V02	G0031	C01	0.00	00003	***12173.5***
668 (2)	04	V02	G0031	C01	0.00	00004	***12697.8***
668 (2)	04	V02	G0031	C01	0.00	00005	***11667.8***
668 (2)	04	V02	G0031	C01	0.00	00006	***8814.7***
668 (2)	04	V02	G0031	C01	0.00	00007	***11047.8***
668 (2)	04	V02	G0031	C01	0.00	00008	***6104.8***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.
44 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DOWNLOAD FILE & SURVEY INSTRUMENTATION CALIBRATION SUMMARY

04/14/98

Exposure Rate Measurements

Survey Package : C0500 SYSTEMS

Residual Heat Removal System

SURVEY		M2350		DETECTOR			
DATE	FILE #	INST S/N	CAL DUE	MODEL	S/N	CAL DUE	TECHNICIAN
3/18/98	668 (2)	95348	3/20/98	44-38	088919	7/23/98	AOK2982

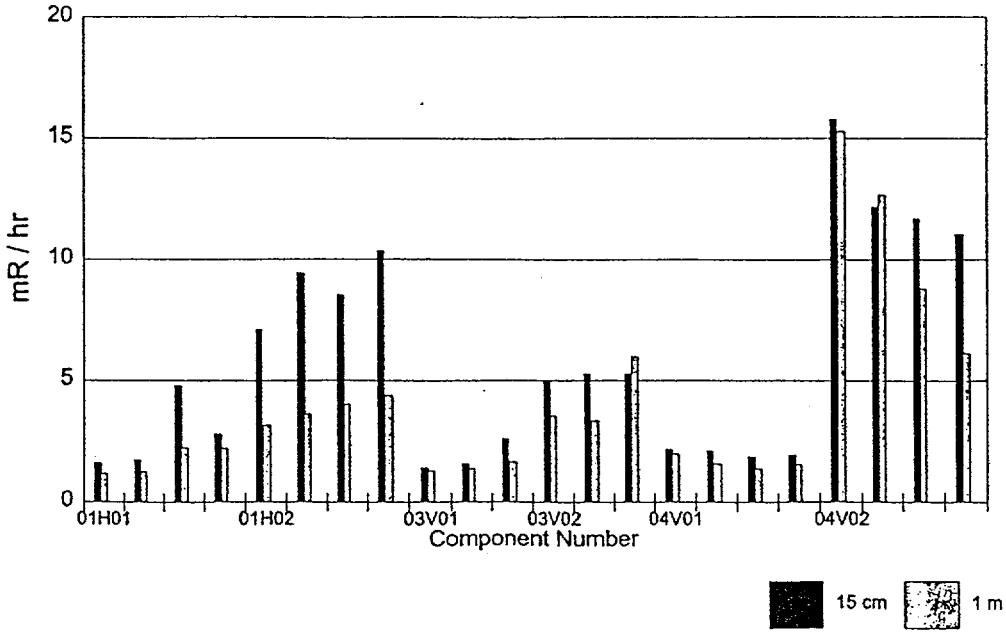
CALIBRATION DATES VERIFIED AS ACCEPTABLE

Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

SURVEY PACKAGE C0500

Package Number	Component Number	Component Description	Direction	15 cm mR/hr	1 meter mR/hr	Ratio of 15 cm to 1 meter
C0500	01H01	RHR heat exchanger E-3B	North	1.6	1.2	1.4
			East	1.7	1.3	1.4
			South	4.8	2.2	2.1
			West	2.8	2.2	1.3
C0500	01H02	RHR heat exchanger E-3A	North	7.1	3.2	2.2
			East	9.4	3.6	2.6
			South	8.5	4.0	2.1
			West	10.3	4.4	2.4
C0500	03V01	Valve RH-20	North	1.4	1.3	1.1
			East	1.6	1.4	1.1
			South	2.6	1.7	1.6
C0500	03V02	Valve RH-21	North	5.0	3.5	1.4
			East	5.3	3.3	1.6
			South	5.3	6.0	0.9
C0500	04V01	Valve RH-T-12	North	2.2	2.0	1.1
			East	2.1	1.6	1.3
			South	1.9	1.4	1.3
			West	1.9	1.6	1.2
C0500	04V02	Valve RH-11	North	15.8	15.3	1.0
			East	12.2	12.7	1.0
			South	11.7	8.8	1.3
			West	11.0	6.1	1.8

Exposure Rates - 15 cm and 1 meter



Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Beta Activity

Survey Package C0500 SYSTEMS

Residual Heat Removal System

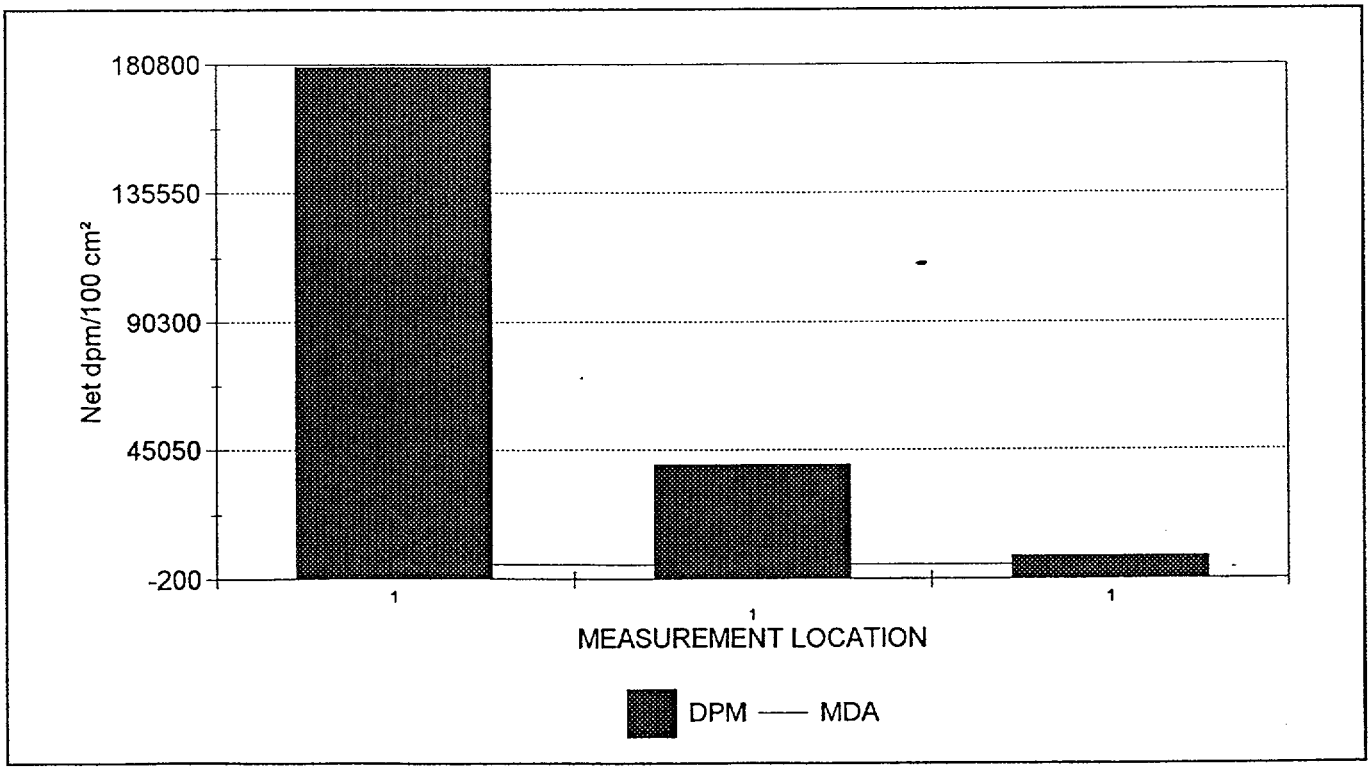
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	76,000.0
Maximum	180,000.0
Minimum	8,000.0
Standard Deviation	91,476.8
MDA	5,000.0

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <100 net dpm/100 cm²	NO
Results above 100 net dpm/100 cm²	3
Number of results above MDA	3



3 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination

Survey Package : C0500 SYSTEMS

Residual Heat Removal System

RESULTS LISTING - SORTED BY SURFACE CODE

XLS FILE	UNIT	SURFACE	REASON	MSRMNT LOCATION	ALPHA	BETA
RM-14DATA6	04	V04	C01	1		***8,000.0***
RM-14DATA5	04	V03	C01	1		***40,000.0***
RM-14DATA4	02	V01	C01	1		***180,000.0***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 100.00 dpm/100 cm² (beta activity) and/or 20.00 dpm/100 cm² (alpha activity).
3 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DATAFILE & ALPHA - BETA COUNTER CALIBRATION SUMMARY

04/14/98 Removable Contamination

Survey Package : C0500 SYSTEMS

Residual Heat Removal System

SURVEYDATE	XLS FILE	INST ID	S/N	CAL DUE	LAB TECHNICIAN
3/28/98	RM-14DATA4	3	8263	5/26/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/28/98	RM-14DATA5	3	8263	5/26/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/28/98	RM-14DATA6	3	8263	5/26/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination - Tritium Activity

Survey Package : C0500 SYSTEMS

Residual Heat Removal System

RESULTS LISTING - SORTED BY SURFACE CODE

SAMPLE ID	SAMPLE TYPE	UNIT	SURF	REASN	MSRMNT LOCATION	MDA	TRITIUM ACTIVITY
D66	Hoppes patch	02	V01	C01	00001	138.9	***58,475.2***
D67	Hoppes patch	04	V03	C01	00001	138.9	***12,274.8***
D71	Hoppes patch	04	V04	C01	00001	138.9	***102.1***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 75 dpm/100 cm²,
Italic values exceed 100 dpm/100 cm².

Maine Yankee Atomic Power Plant Site Characterization

LIQUID SCINTILLATION COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination - Tritium Activity

Survey Package: C0500 SYSTEMS

Residual Heat Removal System

SURVEYDATE	INSTRUMENT	MODEL	S/N	CAL DUE	LAB TECHNICIAN
4/6/98	Packard	2750	416221	6/16/98	LDT
					CALIBRATION DATE VERIFIED AS ACCEPTABLE

Maine Yankee Atomic Power Plant Site Characterization

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98 OUTPUT BATCH SN = 840

Survey Package C0500 SYSTEMS

Residual Heat Removal System

UNIT : 02 SURFACE : V01 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP23	PET00028	1.0	1800	Co-57	< 164.0	164.0	0.0
				Co-58	779.00	749.0	454.0
				Co-60	86400.00	303.0	3,780.0
				Cs-134	< 502.0	502.0	0.0
				Cs-137	< 529.0	529.0	0.0
				K-40	< 1250.0	1,250.0	0.0
				Mn-54	< 605.0	605.0	0.0
				Sb-125	7220.00	1,010.0	590.0

UNIT : 04 SURFACE : V03 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP25	PET00029	1.0	1800	Co-57	< 88.8	88.8	0.0
				Co-60	26600.00	252.0	0.0
				Cs-134	< 222.0	222.0	0.0
				Cs-137	< 285.0	285.0	0.0
				K-40	< 1080.0	1,080.0	0.0
				Mn-54	< 349.0	349.0	0.0

Survey Package C0500 SYSTEMS

Residual Heat Removal System

UNIT : 04 SURFACE : V04 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP29	PET00030	1.0	1800	Co-57	< 53.3	53.3	0.0
				Co-60	5630.00	108.0	329.0
				Cs-134	< 119.0	119.0	0.0
				Cs-137	< 154.0	154.0	0.0
				K-40	< 821.0	821.0	0.0
				Mn-54	< 186.0	186.0	0.0

04/14/98

CHARACTERIZATION SUMMARY

SURVEY PACKAGE NUMBER :C0600

SYSTEMS

PACKAGE DESCRIPTION

Primary Vents and Drains

SURVEY AREA DESCRIPTION

Primary Vent and Drains System

GENERAL HISTORICAL INFORMATION (Operational history, etc.)

The Primary Vent and Drains System collected radioactive and potentially radioactive gases and liquids from the Reactor Coolant System (RCS) and associated auxiliary systems for processing and disposal.

SUMMARY OF CHARACTERIZATION ACTIVITIES

Survey units were established for the system by building and elevation as shown in the following Summary of Survey Units. The Surface(s) listing indicates the component name, survey surface code and, where applicable, the Maine Yankee system component number.

A total of 27 exposure rate measurements were collected at 6 component locations.

Beta scan surveys and direct measurements for total beta activity were not prescribed for this survey package.

Smear samples were collected from component interior surfaces to analyze for removable alpha and beta activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable tritium activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable plant-derived radionuclide activity by gamma spectroscopy at 3 survey measurement locations indicated on the results listing report.

The survey result statistical summaries, graphs and results listings are shown in the following individual reports including calibration summaries for the instruments used for each measurement type.

CHARACTERIZATION SURVEY RESULTS

o The average and maximum exposure rate measurement results were 165.6 mR/hr and 1,326 mR/hr, respectively. The ratio of the 15 cm distance measurements to the 1 meter distance measurements ranged from 1.0 to 2.2.

o There were 3 measurements for removable beta activity above MDA (maximum MDA was 5,000 dpm/100cm^2). The maximum measurement result was 140,000 dpm/100cm^2.

o 2 of the 3 smear measurements were analyzed for removable alpha activity and no measurements were above MDA (8.4 dpm/100cm^2).

o There were 2 measurements for removable tritium activity above MDA (39 dpm/100cm^2). The maximum measurement result was 1,535 dpm/100cm^2.

o Of the 3 samples analyzed by gamma spectroscopy, all samples indicated plant-derived radionuclide activity above MDA. The analysis of the samples indicated the presence of Co-58, Co-60, Cs-134, Cs-137 and Sb-125.

REFERENCES (Documents, Interviews)

Maine Yankee Drawing 1150 - FM - 93 A, B
Operator System Training Manual, Chapter 17

SUMMARY OF SURVEY UNIT(S)

04/14/98 OUTPUT BATCH SN = 841

PACKAGE C0600 SYSTEMS

Primary Vents and Drains

UNIT(S)	**SURFACE(S)**
01 - 11' Primary Auxiliary Building Components	S01 (Duplex strainer STR-6B) T01 (Primary drain tank TK-11) T02 (Aerated drain tank TK-12A) T03 (Aerated drain tank TK-12B) U01 (Primary drain tank pump P-15A) U02 (Primary drain tank pump P-15B) V01 (Valve PD-3) V02 (Valve PD-8) V03 (Valve PD-165)

REASON(S) CHARACTERIZATION SURVEY (C01)

MATERIALS

MAT'L CODE	MATERIAL DESCRIPTION	BETA BKGD (dpm/100 cm²)
G0031	METAL - BARE (GAMMA)	0.0

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Exposure Rate Measurements

Survey Package C0600 SYSTEMS

Primary Vents and Drains

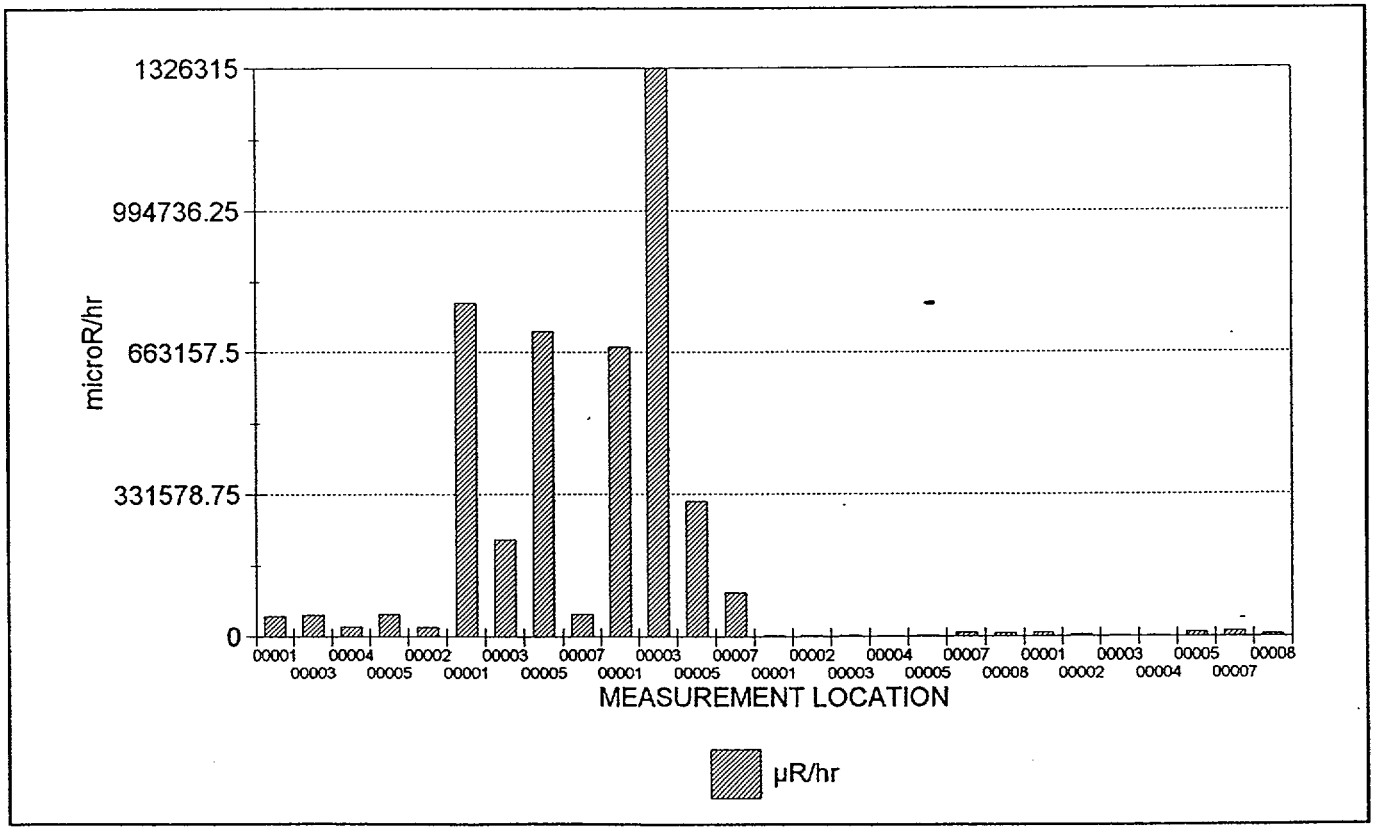
STATISTICAL SUMMARY

	µR/hr
Mean	165,583.0
Maximum	1,326,311.
Minimum	1,683.0
Standard Deviation	325,891.8

Samples Reported	27
Samples Prescribed	28

TESTS PERFORMED

Samples reported satisfy samples prescribed	NO



27 RESULTS ARE GRAPHED

04/14/98

Exposure Rate Measurements

Survey Package : C0600 SYSTEMS

Primary Vents and Drains

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
557 (2)	01	S01	G0031	C01	0.00	00001	***49511.4***
557 (2)	01	S01	G0031	C01	0.00	00003	***52873.6***
557 (2)	01	S01	G0031	C01	0.00	00004	***24014.2***
557 (2)	01	S01	G0031	C01	0.00	00005	***53830.8***
557 (2)	01	T01	G0031	C01	0.00	00002	***21836.5***
556 (2)	01	T02	G0031	C01	0.00	00001	***778714.7***
556 (2)	01	T02	G0031	C01	0.00	00003	***226411.7***
556 (2)	01	T02	G0031	C01	0.00	00005	***712207.4***
557 (2)	01	T02	G0031	C01	0.00	00007	***54495.0***
556 (2)	01	T03	G0031	C01	0.00	00001	***674441.7***
556 (2)	01	T03	G0031	C01	0.00	00003	***1326311.0***
556 (2)	01	T03	G0031	C01	0.00	00005	***315180.9***
557 (2)	01	T03	G0031	C01	0.00	00007	***103077.2***
557 (2)	01	U01	G0031	C01	0.00	00001	***3107.7***
557 (2)	01	U01	G0031	C01	0.00	00002	***2648.4***
557 (2)	01	U01	G0031	C01	0.00	00003	***3121.0***
557 (2)	01	U01	G0031	C01	0.00	00004	***1934.0***
557 (2)	01	U01	G0031	C01	0.00	00005	***2775.6***
557 (2)	01	U01	G0031	C01	0.00	00007	***8255.8***
557 (2)	01	U01	G0031	C01	0.00	00008	***8068.0***
557 (2)	01	U02	G0031	C01	0.00	00001	***9226.4***
557 (2)	01	U02	G0031	C01	0.00	00002	***4655.7***
557 (2)	01	U02	G0031	C01	0.00	00003	***2122.9***
557 (2)	01	U02	G0031	C01	0.00	00004	***1683.0***
557 (2)	01	U02	G0031	C01	0.00	00005	***10789.2***
557 (2)	01	U02	G0031	C01	0.00	00007	13360.0
557 (2)	01	U02	G0031	C01	0.00	00008	***6086.2***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.
27 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DOWNLOAD FILE & SURVEY INSTRUMENTATION CALIBRATION SUMMARY

04/14/98

Exposure Rate Measurements

Survey Package : C0600 SYSTEMS

Primary Vents and Drains

SURVEY		M2350		DETECTOR			
DATE	FILE #	INST S/N	CAL DUE	MODEL	S/N	CAL DUE	TECHNICIAN
2/6/98	556 (2)	126183	4/16/98	133-4	092368	7/23/98	LCF0451
							CALIBRATION DATES VERIFIED AS ACCEPTABLE
2/6/98	557 (2)	117573	4/14/98	44-38	075085	7/23/98	LCF0451
							CALIBRATION DATES VERIFIED AS ACCEPTABLE

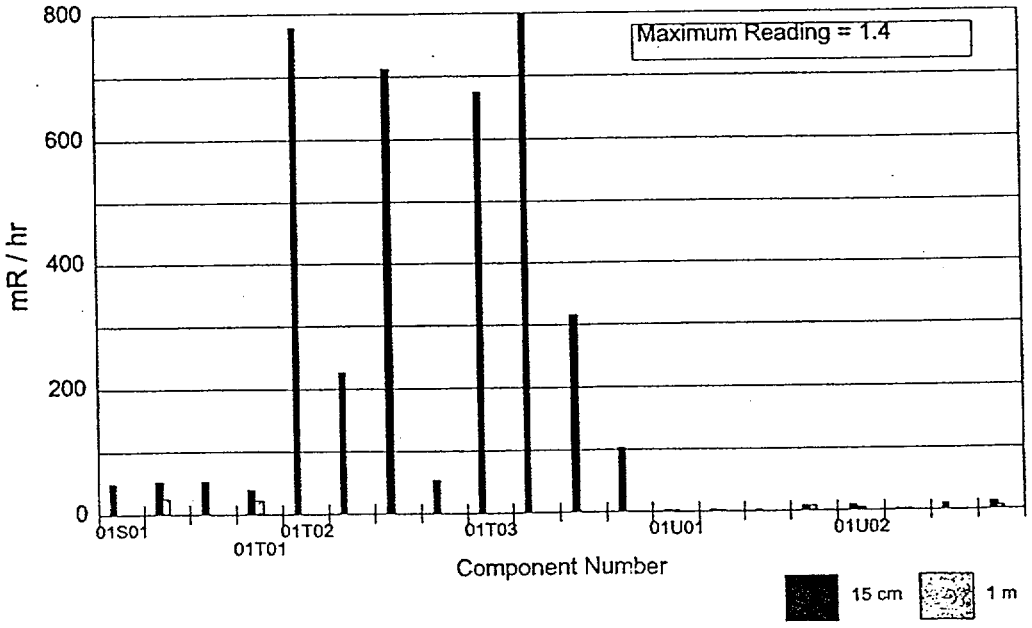
Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

SURVEY PACKAGE C0600

Package Number	Component Number	Component Description	Direction	15 cm mR/hr	1 meter mR/hr	Ratio of 15 cm to 1 meter
C0600	01S01	Duplex strainer STR-6B	North	49.5	*	
			East	52.9	24.0	2.2
			South	53.8	*	
C0600	01T01	Primary drain tank TK-11	North	39.2	21.8	1.8
C0600	01T02	Aerated drain tank TK-12A	North	778.7	*	
			East	226.4	*	
			South	712.2	*	
			West	54.5	*	
C0600	01T03	Aerated drain tank TK-12B	North	674.4	*	
			East	1326.3	*	
			South	315.2	*	
			West	103.1	*	
C0600	01U01	Primary drain tank pump P-15A	North	3.1	2.6	1.2
			East	3.1	1.9	1.6
			South	2.8	*	
			West	8.3	8.1	1.0
C0600	01U02	Primary drain tank pump P-15B	North	9.2	4.7	2.0
			East	2.1	1.7	1.3
			South	10.8	*	
			West	13.4	6.1	2.2

* Measurement not collected due to interfering surface.

Exposure Rates - 15 cm and 1 meter



Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Beta Activity

Survey Package C0600 SYSTEMS

Primary Vents and Drains

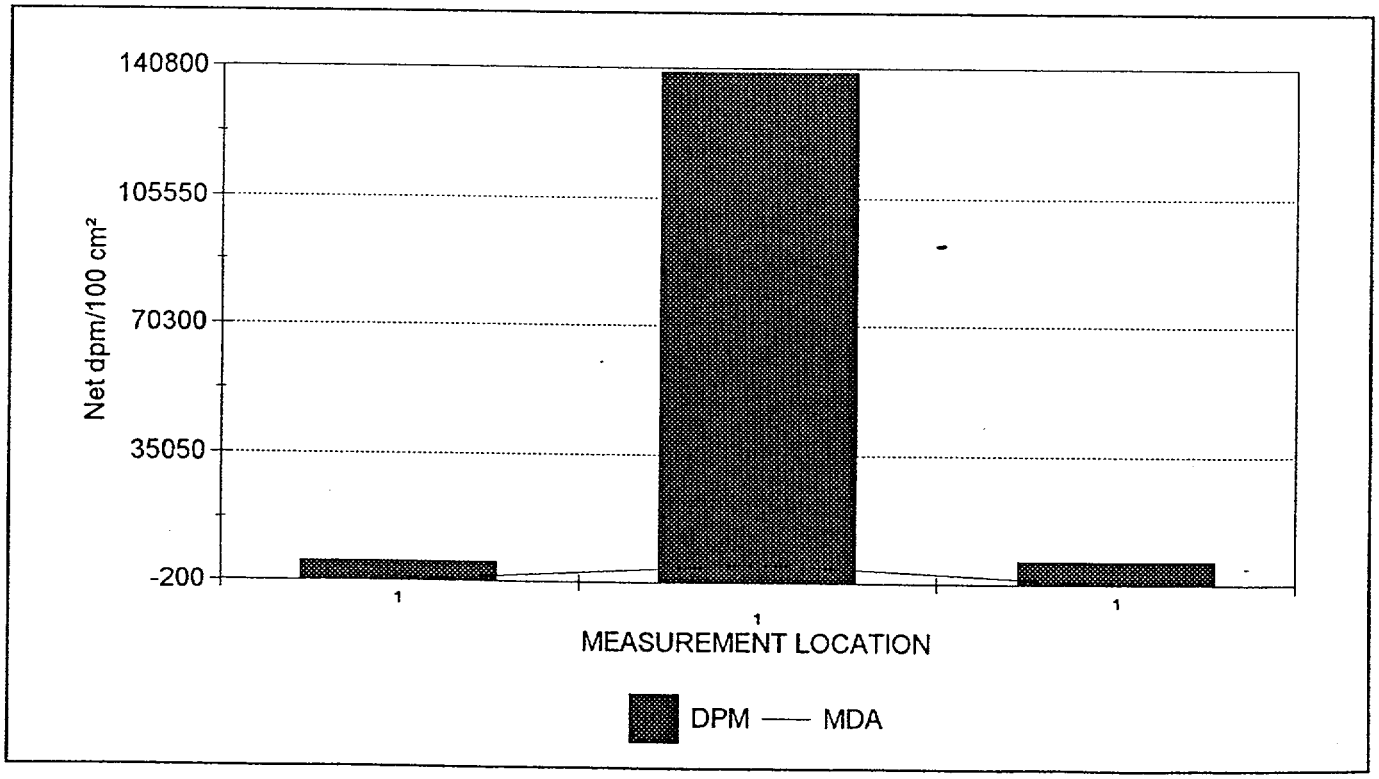
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	50,584.5
Maximum	140,000.0
Minimum	5,344.3
Standard Deviation	77,438.0
MDA	5,000.0

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <100 net dpm/100 cm²	NO
Results above 100 net dpm/100 cm²	3
Number of results above MDA	3



3 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Alpha Activity

Survey Package C0600 SYSTEMS

Primary Vents and Drains

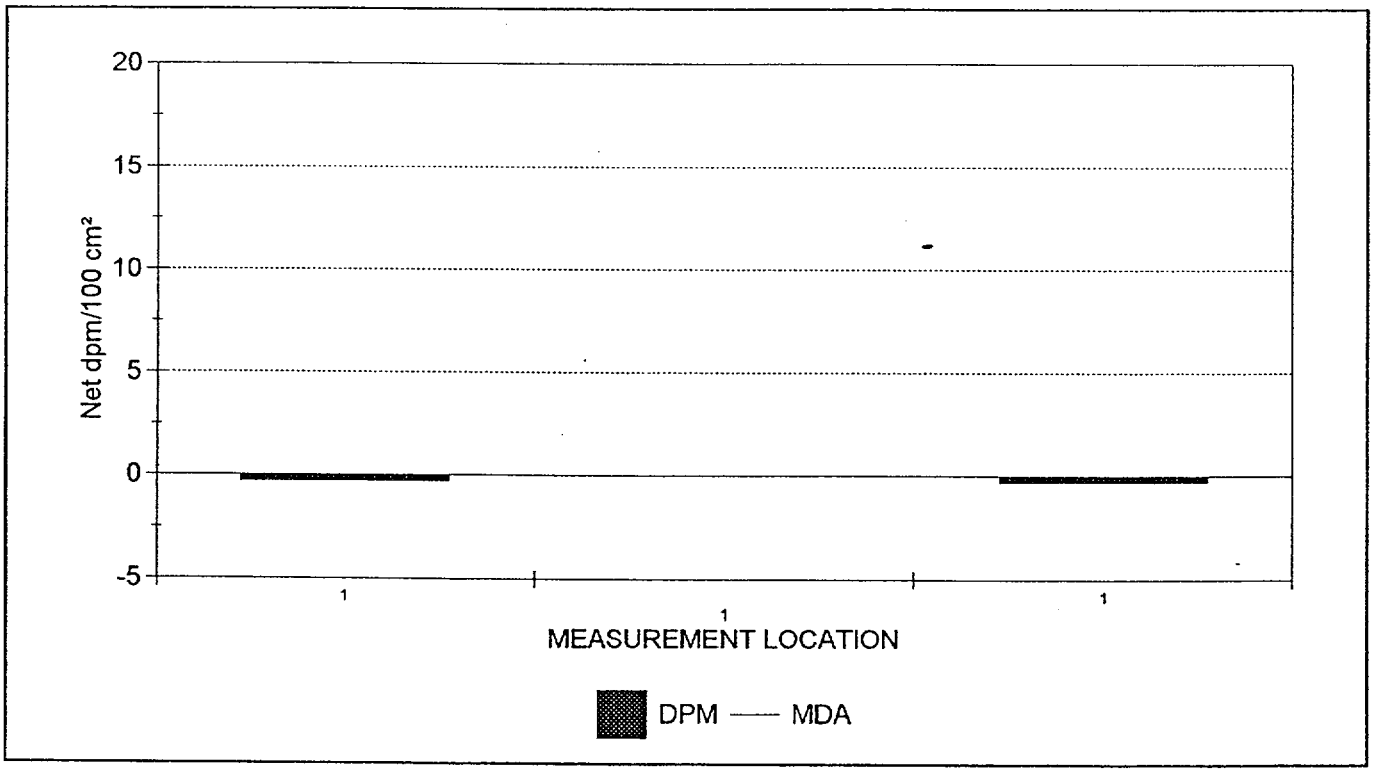
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	-0.2
Maximum	0.0
Minimum	-0.3
Standard Deviation	0.2
MDA	8.4

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <10 net dpm/100 cm²	YES
Results above 20 net dpm/100 cm²	0
Number of results above MDA	0



3 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination

Survey Package : C0600 SYSTEMS

Primary Vents and Drains

RESULTS LISTING - SORTED BY SURFACE CODE

XLS FILE	UNIT	SURFACE	REASON	MSRMNT LOCATION	ALPHA	BETA
SME1E123.XLS	01	V03	C01	1	-0.3	***6,409.1***
RM-14DATA7	01	V02	C01	1		***140,000.0***
SME1E121.XLS	01	V01	C01	1	-0.3	***5,344.3***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 100.00 dpm/100 cm² (beta activity) and/or 20.00 dpm/100 cm² (alpha activity).
3 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DATAFILE & ALPHA - BETA COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination

Survey Package : C0600 SYSTEMS

Primary Vents and Drains

SURVEYDATE	XLS FILE	INST ID	S/N	CAL DUE	LAB TECHNICIAN
3/28/98	RM-14DATA7	3	8263	5/26/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E121.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E123.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination - Tritium Activity

Survey Package : C0600 SYSTEMS

Primary Vents and Drains

RESULTS LISTING - SORTED BY SURFACE CODE

SAMPLE ID	SAMPLE TYPE	UNIT	SURF	REASN	MSRMNT LOCATION	MDA	TRITIUM ACTIVITY
D33	Hoppes patch	01	V01	C01	00001	38.9	***1,535.3***
D34	Hoppes patch	01	V02	C01	00001	39.0	20.7
D35	Hoppes patch	01	V03	C01	00001	39.0	**88.4**

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 75 dpm/100 cm²,
Italic values exceed 100 dpm/100 cm².

Maine Yankee Atomic Power Plant Site Characterization

LIQUID SCINTILLATION COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination - Tritium Activity

Survey Package : C0600 SYSTEMS

Primary Vents and Drains

SURVEYDATE	INSTRUMENT	MODEL	S/N	CAL DUE	LAB TECHNICIAN
3/5/98	Packard	2750	416221	6/16/98	LDT
					CALIBRATION DATE VERIFIED AS ACCEPTABLE

Maine Yankee Atomic Power Plant Site Characterization

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98 OUTPUT BATCH SN = 841

Survey Package C0600 SYSTEMS

Primary Vents and Drains

UNIT : 01 SURFACE : V01 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP005	PET00006	1.0	1200	Co-57	< 48.0	48.0	0.0
				Co-60	1580.00	103.0	163.0
				Cs-134	< 135.0	135.0	0.0
				Cs-137	< 199.0	199.0	0.0
				K-40	< 927.0	927.0	0.0
				Mn-54	< 129.0	129.0	0.0

UNIT : 01 SURFACE : V02 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP006	PET00009	1.0	1200	Co-57	< 120.0	120.0	0.0
				Co-60	20100.00	146.0	977.0
				Cs-134	< 386.0	386.0	0.0
				Cs-137	902.00	205.0	1,960.0
				K-40	< 851.0	851.0	0.0
				Mn-54	< 356.0	356.0	0.0

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98 OUTPUT BATCH SN = 841

Survey Package C0600 SYSTEMS

Primary Vents and Drains

UNIT : 01 SURFACE : V03 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP37	PET00055	1.0	1200	Co-57	< 226.0	226.0	0.0
				Co-58	826.00	1,060.0	641.0
				Co-60	54500.00	284.0	2,450.0
				Cs-134	1490.00	283.0	263.0
				Cs-137	37900.00	620.0	2,530.0
				K-40	< 1170.0	1,170.0	0.0
				Mn-54	< 598.0	598.0	0.0
				Sb-125	1380.00	902.0	407.0

04/14/98

CHARACTERIZATION SUMMARY

SURVEY PACKAGE NUMBER :C0700 SYSTEMS

PACKAGE DESCRIPTION Fuel Pool Cooling System

SURVEY AREA DESCRIPTION

Fuel Pool Cooling and Refueling Purification System

GENERAL HISTORICAL INFORMATION (Operational history, etc.)

The Fuel Pool Cooling System removed decay heat generated by spent fuel assemblies stored in the spent fuel pool and purified the spent fuel pool water by removing particulate matter and dissolved solids. The Refueling Purification System provided a means for RWST recirculation and/or purification of water from the Refueling Water Storage Tank, provided spent fuel pool makeup, refueling cavity flooding and/or draining, refueling cavity purification, Residual Heat Removal system purification via the spent fuel or letdown purification systems and Reactor Coolant System degasification via the letdown system.

SUMMARY OF CHARACTERIZATION ACTIVITIES

Survey units were established for the system by building and elevation as shown in the following Summary of Survey Units. The Surface(s) listing indicates the component name, survey surface code and, where applicable, the Maine Yankee system component number.

A total of 43 exposure rate measurements were collected at 7 component locations. Due to physical interferences, 13 measurements could not be collected.

Beta scan surveys and direct measurements for total beta activity were not prescribed for this survey package.

Smear samples were collected from component interior surfaces to analyze for removable alpha and beta activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable tritium activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable plant-derived radionuclide activity by gamma spectroscopy at 4 survey measurement locations indicated on the results listing report.

The survey result statistical summaries, graphs and results listings are shown in the following individual reports including calibration summaries for the instruments used for each measurement type.

CHARACTERIZATION SURVEY RESULTS

o The average and maximum exposure rate measurement results were 829 mR/hr and 16,945 mR/hr, respectively. The ratio of the 15 cm distance measurements to the 1 meter distance measurements ranged from 0.7 to 3.5.

o There were 3 measurements for removable beta activity above MDA (maximum MDA was 5,000 dpm/100cm^2). The maximum measurement result was 20,000 dpm/100cm^2.

o 1 of the 3 smear measurements was analyzed for removable alpha activity was above MDA (8.4 dpm/100cm^2). The maximum measurement result was 10.1 dpm/100cm^2.

o There was 1 measurement for removable tritium activity above MDA (39.5 dpm/100cm^2). The maximum

measurement result was 52.2 dpm/100cm².

o Of the 4 samples analyzed by gamma spectroscopy, all samples indicated plant-derived radionuclide activity above MDA. The analysis of the samples indicated the presence of Co-60, Cs-137 and Sb-125.

REFERENCES (Documents, Interviews)

Maine Yankee Drawing 1150 - FM - 97 A, 101 A
Operator System Training Manual, Chapter 37

SUMMARY OF SURVEY UNIT(S)

04/14/98 OUTPUT BATCH SN = 842

PACKAGE C0700 SYSTEMS

Fuel Pool Cooling System

UNIT(S)	SURFACE(S)
01 - Fuel Building Components	H01 (Fuel pool heat exchanger E-25) U01 (Fuel pool cooling pump P-17A) U02 (Fuel pool purification pump P-85) V01 (Valve FP-6) V02 (Valve FP-12) V03 (Valve FPU-6)
02 - Components under new fuel laydown area	S01 (Fuel pool prefilter FL-2) S02 (Fuel pool post filter FL-29)
03 - -2' Containment Annulus	P01 (Spoolpiece downstream of CPU-3)
04 - Primary Auxiliary Building Lower Level Pipe Tunnel Components	M01 (Fuel pool demineralizer I-4)

REASON(S) CHARACTERIZATION SURVEY (C01)

MATERIALS

MAT'L CODE	MATERIAL DESCRIPTION	BETA BKGD (dpm/100 cm²)
G0031	METAL - BARE (GAMMA)	0.0

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Exposure Rate Measurements

Survey Package C0700 SYSTEMS

Fuel Pool Cooling System

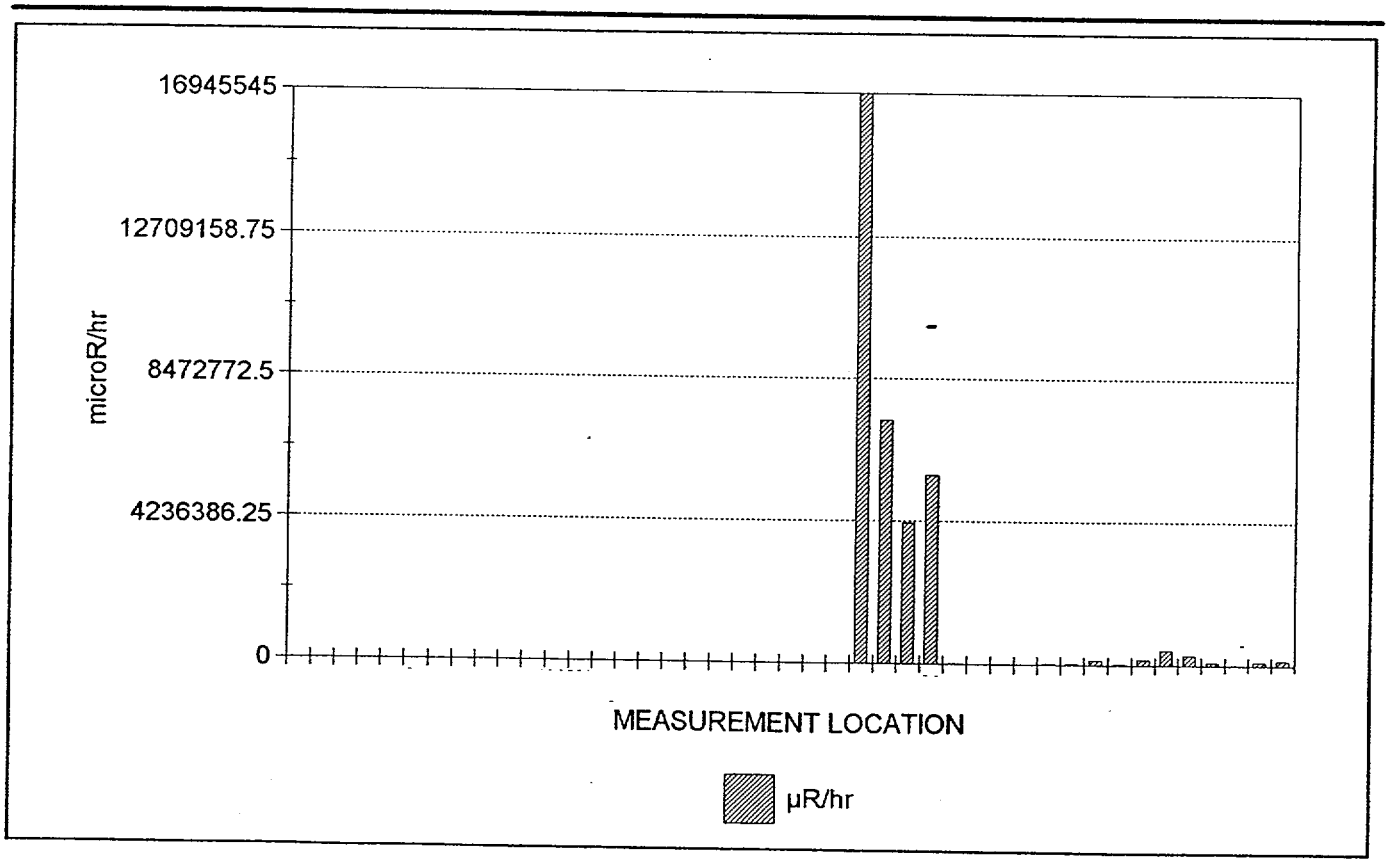
STATISTICAL SUMMARY

	µR/hr
Mean	829,672.1
Maximum	16,945,540
Minimum	554.2
Standard Deviation	2,924,669.

Samples Reported	43
Samples Prescribed	43

TESTS PERFORMED

Samples reported satisfy samples prescribed	YES



43 RESULTS ARE GRAPHED

Survey Package : C0700 SYSTEMS

Fuel Pool Cooling System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
543 (2)	01	H01	G0031	C01	0.00	00001	***554.2***
543 (2)	01	H01	G0031	C01	0.00	00002	***809.2***
543 (2)	01	H01	G0031	C01	0.00	00003	***8115.0***
543 (2)	01	H01	G0031	C01	0.00	00004	***3176.1***
543 (2)	01	H01	G0031	C01	0.00	00005	***1300.2***
543 (2)	01	H01	G0031	C01	0.00	00006	***1122.2***
543 (2)	01	H01	G0031	C01	0.00	00007	***8454.9***
543 (2)	01	H01	G0031	C01	0.00	00008	***4504.6***
543 (2)	01	U01	G0031	C01	0.00	00001	***1256.7***
543 (2)	01	U01	G0031	C01	0.00	00002	***1609.1***
543 (2)	01	U01	G0031	C01	0.00	00003	***2944.2***
543 (2)	01	U01	G0031	C01	0.00	00004	***3378.3***
543 (2)	01	U01	G0031	C01	0.00	00005	***2402.2***
543 (2)	01	U01	G0031	C01	0.00	00006	***2107.1***
543 (2)	01	U01	G0031	C01	0.00	00007	***1894.7***
543 (2)	01	U01	G0031	C01	0.00	00008	***1492.4***
543 (2)	01	U02	G0031	C01	0.00	00001	***5555.6***
543 (2)	01	U02	G0031	C01	0.00	00002	***3046.5***
543 (2)	01	U02	G0031	C01	0.00	00003	***5510.2***
543 (2)	01	U02	G0031	C01	0.00	00004	***5786.5***
543 (2)	01	U02	G0031	C01	0.00	00005	***2245.5***

REMAINING RESULTS PRINTED ON NEXT PAGE

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.

04/14/98

Exposure Rate Measurements

Survey Package : C0700 SYSTEMS

Fuel Pool Cooling System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
543 (2)	01	U02	G0031	C01	0.00	00006	***2372.3***
543 (2)	01	U02	G0031	C01	0.00	00007	***2379.3***
543 (2)	01	U02	G0031	C01	0.00	00008	***1734.3***
583 (2)	02	S01	G0031	C01	0.00	00001	***16945540.0***
583 (2)	02	S01	G0031	C01	0.00	00003	***7231879.0***
583 (2)	02	S01	G0031	C01	0.00	00005	***4184741.0***
583 (2)	02	S01	G0031	C01	0.00	00007	***5610534.0***
583 (2)	02	S02	G0031	C01	0.00	00001	***11042.6***
583 (2)	02	S02	G0031	C01	0.00	00003	***6076.6***
583 (2)	02	S02	G0031	C01	0.00	00005	***4251.7***
583 (2)	02	S02	G0031	C01	0.00	00007	***6409.9***
561 (2)	03	P01	G0031	C01	0.00	00001	***47290.2***
561 (2)	03	P01	G0031	C01	0.00	00002	***38327.5***
561 (2)	03	P01	G0031	C01	0.00	00003	***152598.4***
561 (2)	03	P01	G0031	C01	0.00	00004	***43965.3***
561 (2)	03	P01	G0031	C01	0.00	00005	***180310.9***
561 (2)	03	P01	G0031	C01	0.00	00006	***458877.5***
561 (2)	03	P01	G0031	C01	0.00	00007	***307488.2***
561 (2)	04	M01	G0031	C01	0.00	00001	***86819.6***
561 (2)	04	M01	G0031	C01	0.00	00003	***14729.4***
561 (2)	04	M01	G0031	C01	0.00	00005	***112138.8***
561 (2)	04	M01	G0031	C01	0.00	00007	***159126.9***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.
43 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DOWNLOAD FILE & SURVEY INSTRUMENTATION CALIBRATION SUMMARY

04/14/98

Exposure Rate Measurements

Survey Package : C0700 SYSTEMS

Fuel Pool Cooling System

SURVEY DATE	FILE #	M2350		DETECTOR			TECHNICIAN
		INST S/N	CAL DUE	MODEL	S/N	CAL DUE	
2/4/98	543 (2)	095348	3/20/98	44-38	088919	7/23/98	MAP5535
							CALIBRATION DATES VERIFIED AS ACCEPTABLE
2/6/98	561 (2)	126185	3/20/98	44-38	075082	7/23/98	KFS5185
							CALIBRATION DATES VERIFIED AS ACCEPTABLE
2/10/98	583 (2)	095349	4/15/98	133-4	092366	7/23/98	KFS5185
							CALIBRATION DATES VERIFIED AS ACCEPTABLE

Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

SURVEY PACKAGE C0700

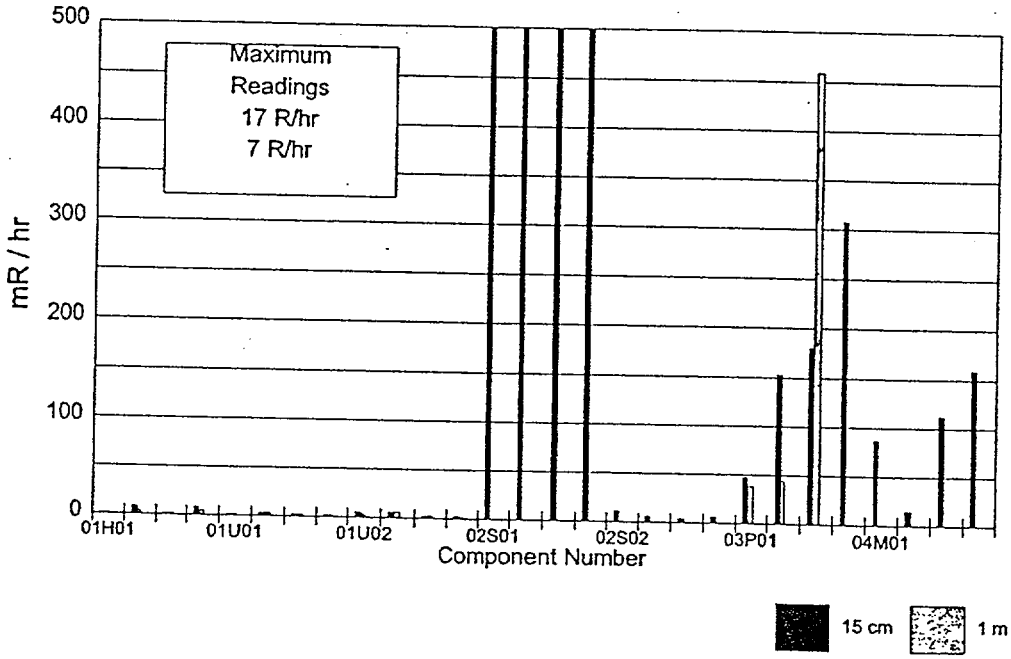
Package Number	Component Number	Component Description	Direction	15 cm mR/hr	1 meter mR/hr	Ratio of 15 cm to 1 meter
C0700	01H01	Fuel pool heat exchanger E-25	North	0.6	0.8	0.7
			East	8.1	3.2	2.6
			South	1.3	1.1	1.2
			West	8.5	4.5	1.9
C0700	01U01	Fuel pool cooling pump P-17A	North	1.3	1.6	0.8
			East	2.9	3.4	0.9
			South	2.4	2.1	1.1
			West	1.9	1.5	1.3
C0700	01U02	Fuel pool purification pump P-85	North	5.6	3.0	1.8
			East	5.5	5.8	1.0
			South	2.2	2.4	0.9
			West	2.4	1.7	1.4
C0700	02S01	Fuel pool prefilter FL-2	North	16945.5	*	
			East	7231.9	*	
			South	4184.7	*	
			West	5610.5	*	
C0700	02S02	Fuel pool post filter FL-29	North	11.0	*	
			East	6.1	*	
			South	4.3	*	
			West	6.4	*	
C0700	03P01	Spoolpiece downstream of CPU-3	North	47.3	38.3	1.2
			East	152.6	44.0	3.5
			South	180.3	458.9	0.4
			West	307.5		
C0700	04M01	Fuel pool demineralizer I-4	North	86.8	*	
			East	14.7	*	
			South	112.1	*	
			West	159.1	*	

* Measurement not collected due to interfering surface.

Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

SURVEY PACKAGE C0700

Exposure Rates - 15 cm and 1 meter



Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Beta Activity

Survey Package C0700 SYSTEMS

Fuel Pool Cooling System

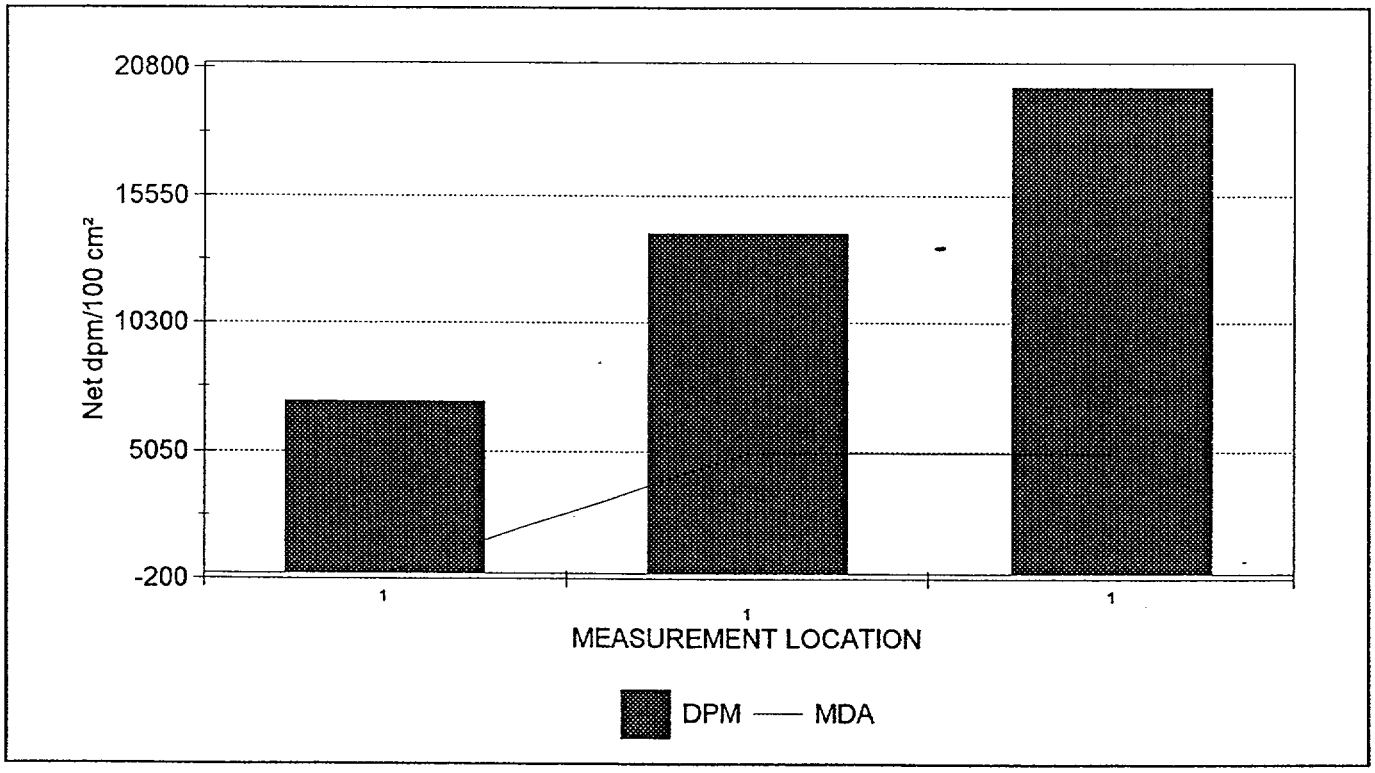
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	13,692.8
Maximum	20,000.0
Minimum	7,078.5
Standard Deviation	6,466.2
MDA	5,000.0

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <100 net dpm/100 cm²	NO
Results above 100 net dpm/100 cm²	3
Number of results above MDA	3



3 RESULTS ARE GRAPHED

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Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Alpha Activity

Survey Package C0700 SYSTEMS

Fuel Pool Cooling System

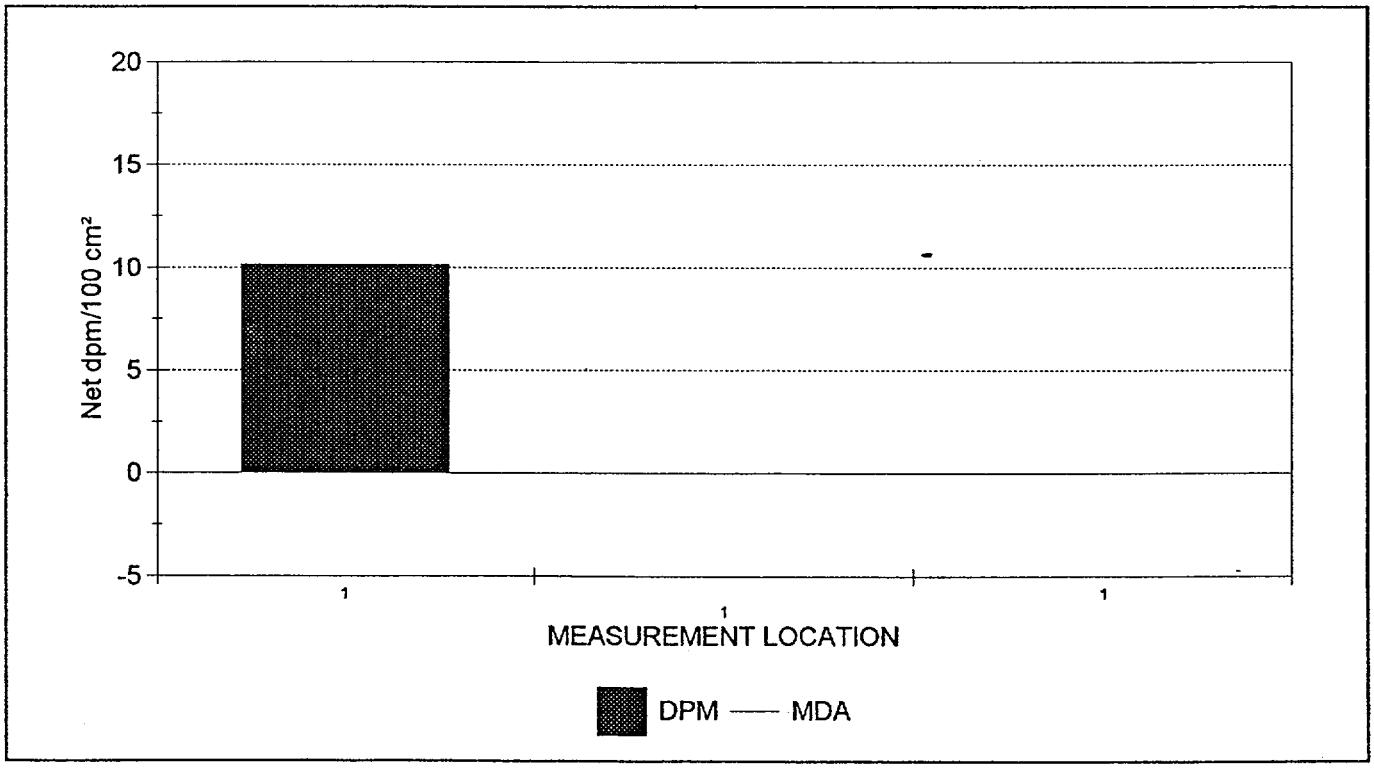
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	3.4
Maximum	10.1
Minimum	
Standard Deviation	5.8
MDA	8.4

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <10 net dpm/100 cm²	YES
Results above 20 net dpm/100 cm²	0
Number of results above MDA	1



3 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination

Survey Package : C0700 SYSTEMS

Fuel Pool Cooling System

RESULTS LISTING - SORTED BY SURFACE CODE

XLS FILE	UNIT	SURFACE	REASON	MSRMNT LOCATION	ALPHA	BETA
RM-14DATA9	01	V03	C01	1		***20,000.0***
RM-14DATA8	01	V02	C01	1		***14,000.0***
SME1E125.XLS	01	V01	C01	1	10.1	***7,078.5***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 100.00 dpm/100 cm² (beta activity) and/or 20.00 dpm/100 cm² (alpha activity).
3 results are listed.

DATAFILE & ALPHA - BETA COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination

Survey Package : C0700 SYSTEMS

Fuel Pool Cooling System

SURVEYDATE	XLS FILE	INST ID	S/N	CAL DUE	LAB TECHNICIAN
3/28/98	RM-14DATA8	3	8263	5/26/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/28/98	RM-14DATA9	3	8263	5/26/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E125.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	

04/14/98 Removable Contamination - Tritium Activity

Survey Package : C0700 SYSTEMS

Fuel Pool Cooling System

RESULTS LISTING - SORTED BY SURFACE CODE

SAMPLE ID	SAMPLE TYPE	UNIT	SURF	REASN	MSRMNT LOCATION	MDA	TRITIUM ACTIVITY
D36	Hoppes patch	01	V01	C01	00001	39.5	52.2
D37	Hoppes patch	01	V02	C01	00001	38.9	10.9
D38	Hoppes patch	01	V03	C01	00001	38.8	29.8

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 75 dpm/100 cm²,
Italic values exceed 100 dpm/100 cm².

Maine Yankee Atomic Power Plant Site Characterization

LIQUID SCINTILLATION COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination - Tritium Activity

Survey Package : C0700 SYSTEMS

Fuel Pool Cooling System

SURVEYDATE	INSTRUMENT	MODEL	S/N	CAL DUE	LAB TECHNICIAN
3/5/98	Packard	2750	416221	6/16/98	LDT
					CALIBRATION DATE VERIFIED AS ACCEPTABLE

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 4

04/14/98 OUTPUT BATCH SN = 842

Survey Package C0700 SYSTEMS

Fuel Pool Cooling System

UNIT : 01 SURFACE : V01 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYD083	PET00019	1.0	1200	Co-57	< 59.8	59.8	0.0
				Co-60	3150.00	74.0	247.0
				Cs-134	< 113.0	113.0	0.0
				Cs-137	< 160.0	160.0	0.0
				K-40	< 761.0	761.0	0.0
				Mn-54	< 189.0	189.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP007	PET00007	1.0	1200	Co-57	< 71.9	71.9	0.0
				Co-60	5100.00	112.0	341.0
				Cs-134	< 206.0	206.0	0.0
				Cs-137	500.00	139.0	125.0
				K-40	< 1120.0	1,120.0	0.0
				Mn-54	< 185.0	185.0	0.0

Survey Package C0700 SYSTEMS

Fuel Pool Cooling System

UNIT : 01 SURFACE : V02 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP38	PET00056	1.0	1200	Co-57	< 86.8	86.8	0.0
				Co-60	5130.00	133.0	324.0
				Cs-134	< 199.0	199.0	0.0
				Cs-137	359.00	146.0	111.0
				K-40	< 799.0	799.0	0.0
				Mn-54	< 194.0	194.0	0.0
				Sb-125	1230.00	338.0	225.0

UNIT : 01 SURFACE : V03 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP008	PET00010	1.0	1200	Co-57	< 57.9	57.9	0.0
				Co-60	2390.00	76.0	193.0
				Cs-134	< 110.0	110.0	0.0
				Cs-137	167.00	94.7	71.3
				K-40	< 899.0	899.0	0.0
				Mn-54	< 124.0	124.0	0.0

04/14/98

CHARACTERIZATION SUMMARY

SURVEY PACKAGE NUMBER :C0800

SYSTEMS

PACKAGE DESCRIPTION

Waste Gas Disposal System

SURVEY AREA DESCRIPTION

Waste Gas Disposal System

GENERAL HISTORICAL INFORMATION (Operational history, etc.)

The Waste Gas Disposal System collected and stored radioactive waste gas for decay of short-lived radioisotopes and controlled the discharge of waste gas to the environment to ensure the release rate of activity was within regulatory limits.

SUMMARY OF CHARACTERIZATION ACTIVITIES

Survey units were established for the system by building and elevation as shown in the following Summary of Survey Units. The Surface(s) listing indicates the component name, survey surface code and, where applicable, the Maine Yankee system component number.

A total of 68 exposure rate measurements were collected at 9 component locations. Due to physical interferences, 4 measurements could not be collected.

Beta scan surveys and direct measurements for total beta activity were not prescribed for this survey package.

Smear samples were collected from component interior surfaces to analyze for removable alpha and beta activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable tritium activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable plant-derived radionuclide activity by gamma spectroscopy at 3 survey measurement locations indicated on the results listing report.

The survey result statistical summaries, graphs and results listings are shown in the following individual reports including calibration summaries for the instruments used for each measurement type.

CHARACTERIZATION SURVEY RESULTS

o The average and maximum exposure rate measurement results were 3.3 mR/hr and 23.6 mR/hr, respectively. The ratio of the 15 cm distance measurements to the 1 meter distance measurements ranged from 0.6 to 2.1.

o There were 3 measurements for removable beta activity above MDA (34 dpm/100cm^2). The maximum measurement result was 6,470 dpm/100cm^2.

o There were no measurements for removable alpha activity above MDA (8.4 dpm/100cm^2).

o There were 3 measurements for removable tritium activity above MDA (39 dpm/100cm^2). The maximum measurement result was 17,125 dpm/100cm^2.

o Of the 3 samples analyzed by gamma spectroscopy, 1 sample indicated plant-derived radionuclide activity above MDA. The analysis of the sample indicated the presence of Co-60.

REFERENCES (Documents, Interviews)

Maine Yankee Drawing 1150 - FM - 100 A
Operator System Training Manual, Chapter 24

SUMMARY OF SURVEY UNIT(S)

04/14/98 OUTPUT BATCH SN = 832

PACKAGE C0800 SYSTEMS

Waste Gas Disposal System

UNIT(S)	SURFACE(S)
01 - 11' Primary Auxiliary Building Components	H01 (Degasifier effluent cooler E-72B) U01 (Degasifier pump P-66B) U02 (Degasifier pump P-66A) V01 (Valve WD-67)
02 - 36' Primary Auxiliary Building Components	M01 (Waste gas compressor C-3A) M02 (Waste gas compressor C-3B) T01 (Waste gas surge tank TK-10) T02 (Waste gas decay tank TK-60A) T03 (Waste gas decay tank TK-60E) V01 (Valve WD-357) V02 (Valve WD-358)
03 - Yard Components	M01 (Primary vent stack)

REASON(S) CHARACTERIZATION SURVEY (C01)

MATERIALS

MAT'L CODE	MATERIAL DESCRIPTION	BETA BKGD (dpm/100 cm²)
G0031	METAL - BARE (GAMMA)	0.0

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Exposure Rate Measurements

Survey Package C0800 SYSTEMS

Waste Gas Disposal System

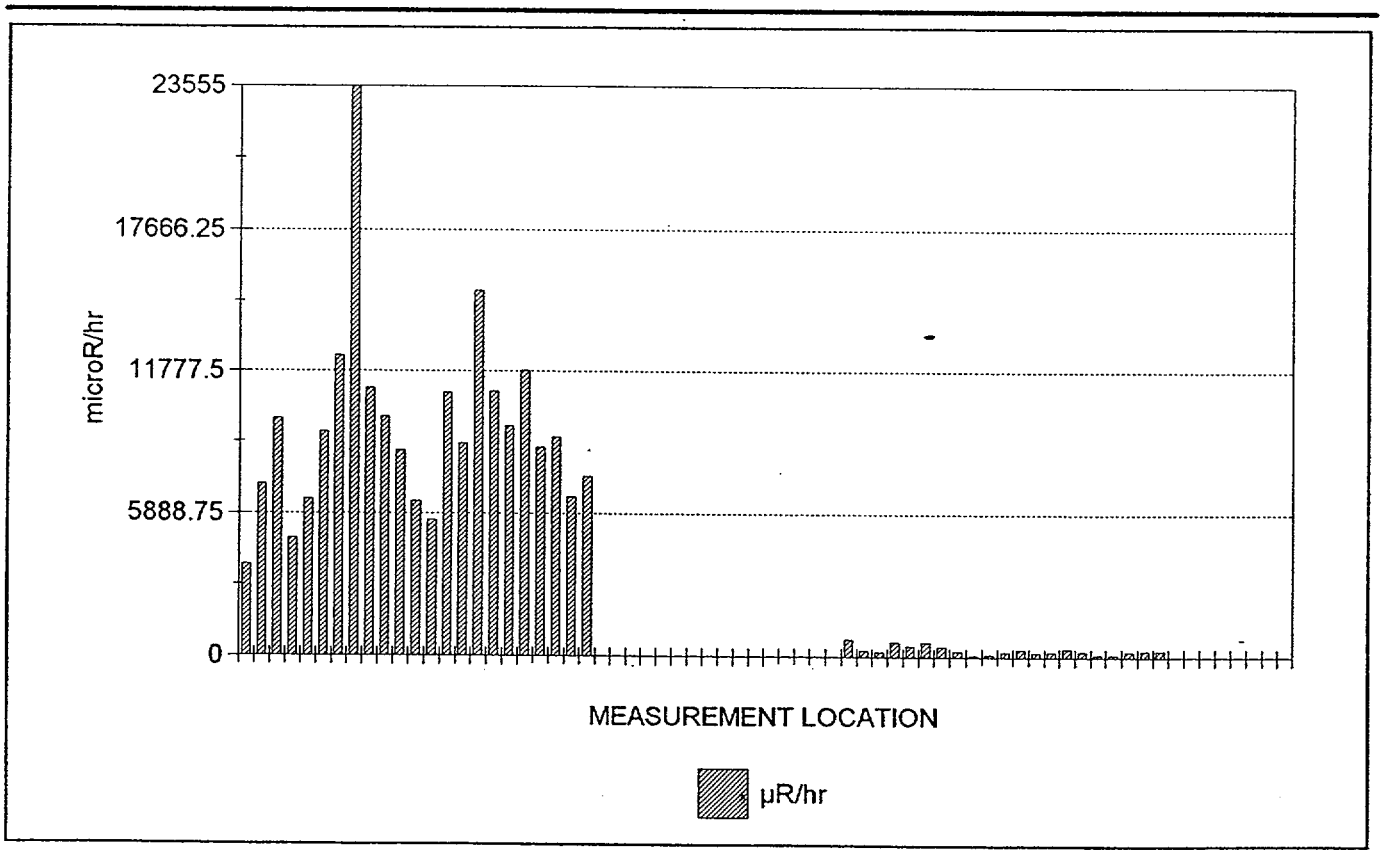
STATISTICAL SUMMARY

	µR/hr
Mean	3,294.8
Maximum	23,554.2
Minimum	15.6
Standard Deviation	4,999.5

Samples Reported	68
Samples Prescribed	68

TESTS PERFORMED

Samples reported satisfy samples prescribed	YES



68 RESULTS ARE GRAPHED

Survey Package : C0800 SYSTEMS

Waste Gas Disposal System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
546 (2)	01	H01	G0031	C01	0.00	00001	***3807.4***
546 (2)	01	H01	G0031	C01	0.00	00003	***7082.4***
546 (2)	01	H01	G0031	C01	0.00	00004	***9804.0***
546 (2)	01	H01	G0031	C01	0.00	00005	***4856.7***
546 (2)	01	H01	G0031	C01	0.00	00006	***6475.2***
546 (2)	01	H01	G0031	C01	0.00	00007	***9236.6***
546 (2)	01	H01	G0031	C01	0.00	00008	***12413.6***
546 (2)	01	U01	G0031	C01	0.00	00001	***23554.2***
546 (2)	01	U01	G0031	C01	0.00	00002	***11059.0***
546 (2)	01	U01	G0031	C01	0.00	00003	***9889.2***
546 (2)	01	U01	G0031	C01	0.00	00004	***8458.2***
546 (2)	01	U01	G0031	C01	0.00	00005	***6400.5***
546 (2)	01	U01	G0031	C01	0.00	00006	***5636.3***
546 (2)	01	U01	G0031	C01	0.00	00007	***10856.6***
546 (2)	01	U01	G0031	C01	0.00	00008	***8757.4***
546 (2)	01	U02	G0031	C01	0.00	00001	***15138.3***
546 (2)	01	U02	G0031	C01	0.00	00002	***10909.1***
546 (2)	01	U02	G0031	C01	0.00	00003	***9469.6***
546 (2)	01	U02	G0031	C01	0.00	00004	***11790.5***
546 (2)	01	U02	G0031	C01	0.00	00005	***8609.1***
546 (2)	01	U02	G0031	C01	0.00	00006	***9029.5***
546 (2)	01	U02	G0031	C01	0.00	00007	***6595.8***
546 (2)	01	U02	G0031	C01	0.00	00008	***7411.4***
547 (2)	02	M01	G0031	C01	60.00	00001	***20.2***
547 (2)	02	M01	G0031	C01	60.00	00002	***26.9***
547 (2)	02	M01	G0031	C01	60.00	00003	24.4
547 (2)	02	M01	G0031	C01	60.00	00004	***22.6***
547 (2)	02	M01	G0031	C01	60.00	00005	***19.7***
547 (2)	02	M01	G0031	C01	60.00	00006	***22.1***
547 (2)	02	M01	G0031	C01	60.00	00007	***22.4***
547 (2)	02	M01	G0031	C01	60.00	00008	***22.3***
547 (2)	02	M02	G0031	C01	60.00	00001	***19.6***
547 (2)	02	M02	G0031	C01	60.00	00002	***21.8***
547 (2)	02	M02	G0031	C01	60.00	00003	***24.7***
547 (2)	02	M02	G0031	C01	60.00	00004	***27.9***
547 (2)	02	M02	G0031	C01	60.00	00005	***24.2***
547 (2)	02	M02	G0031	C01	60.00	00006	***27.0***
547 (2)	02	M02	G0031	C01	60.00	00007	***21.7***
547 (2)	02	M02	G0031	C01	60.00	00008	***23.0***
547 (2)	02	T01	G0031	C01	60.00	00001	***727.0***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.

Survey Package : C0800 SYSTEMS

Waste Gas Disposal System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
547 (2)	02	T01	G0031	C01	60.00	00003	***269.6***
547 (2)	02	T01	G0031	C01	60.00	00004	***224.7***
547 (2)	02	T01	G0031	C01	60.00	00005	***600.5***
547 (2)	02	T01	G0031	C01	60.00	00006	***443.4***
547 (2)	02	T01	G0031	C01	60.00	00007	***612.0***
547 (2)	02	T01	G0031	C01	60.00	00008	***433.5***
547 (2)	02	T02	G0031	C01	60.00	00001	***237.2***
547 (2)	02	T02	G0031	C01	60.00	00003	***82.5***
547 (2)	02	T02	G0031	C01	60.00	00004	***106.9***
547 (2)	02	T02	G0031	C01	60.00	00005	***223.6***
547 (2)	02	T02	G0031	C01	60.00	00006	***326.9***
547 (2)	02	T02	G0031	C01	60.00	00007	***196.8***
547 (2)	02	T02	G0031	C01	60.00	00008	***201.3***
547 (2)	02	T03	G0031	C01	60.00	00001	***332.9***
547 (2)	02	T03	G0031	C01	60.00	00002	***234.2***
547 (2)	02	T03	G0031	C01	60.00	00003	***99.1***
547 (2)	02	T03	G0031	C01	60.00	00004	***108.0***
547 (2)	02	T03	G0031	C01	60.00	00005	***250.4***
547 (2)	02	T03	G0031	C01	60.00	00007	***263.4***
547 (2)	02	T03	G0031	C01	60.00	00008	***273.5***
547 (2)	03	M01	G0031	C01	60.00	00001	***18.1***
547 (2)	03	M01	G0031	C01	60.00	00002	***16.6***
547 (2)	03	M01	G0031	C01	60.00	00003	***15.6***
547 (2)	03	M01	G0031	C01	60.00	00004	***20.5***
547 (2)	03	M01	G0031	C01	60.00	00005	***23.0***
547 (2)	03	M01	G0031	C01	60.00	00006	37.3
547 (2)	03	M01	G0031	C01	60.00	00007	***24.2***
547 (2)	03	M01	G0031	C01	60.00	00008	***32.9***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.
68 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DOWNLOAD FILE & SURVEY INSTRUMENTATION CALIBRATION SUMMARY

04/14/98

Exposure Rate Measurements

Survey Package : C0800 SYSTEMS

Waste Gas Disposal System

SURVEY		M2350		DETECTOR			
DATE	FILE #	INST S/N	CAL DUE	MODEL	S/N	CAL DUE	TECHNICIAN
2/5/98	546 (2)	095348	3/20/98	44-38	088919	7/23/98	MAP5535
							CALIBRATION DATES VERIFIED AS ACCEPTABLE
2/5/98	547 (2)	126197	3/22/98	44-2	PR126922	4/19/98	JFM0682
							CALIBRATION DATES VERIFIED AS ACCEPTABLE

Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

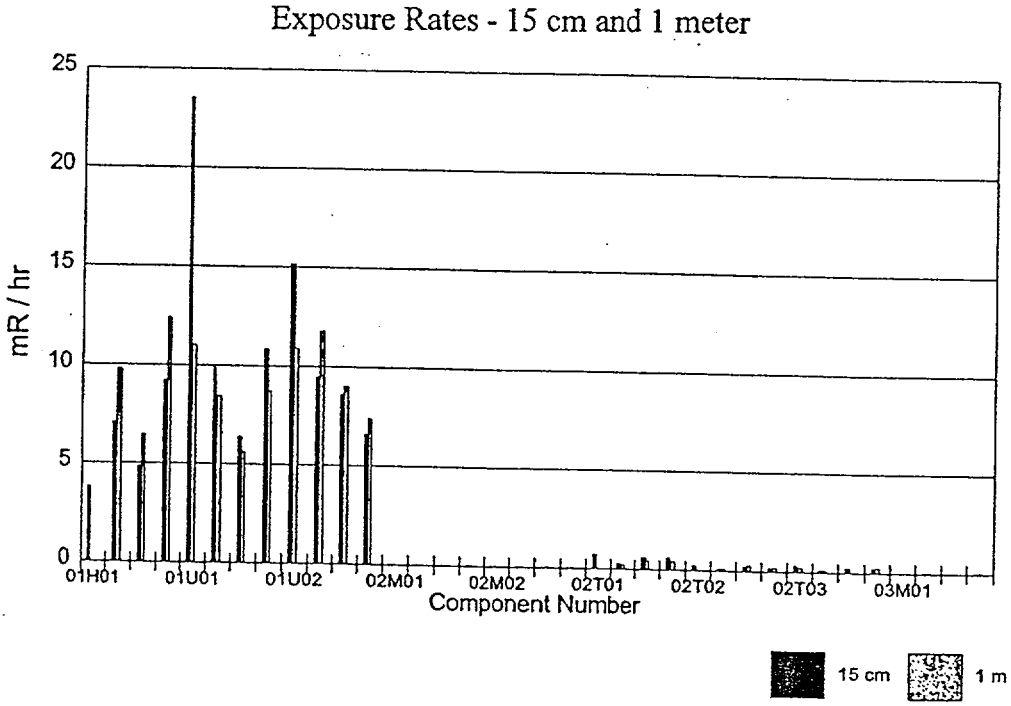
SURVEY PACKAGE C0800

Package Number	Component Number	Component Description	Direction	15 cm mR/hr	1 meter mR/hr	Ratio of 15 cm to 1 meter
C0800	01H01	Degasifier effluent cooler E-72B	North	3.8	*	
			East	7.1	9.8	0.7
			South	4.9	6.5	0.8
			West	9.2	12.4	0.7
C0800	01U01	Degasifier pump P-66B	North	23.6	11.1	2.1
			East	9.9	8.5	1.2
			South	6.4	5.6	1.1
			West	10.9	8.8	1.2
C0800	01U02	Degasifier pump P-66A	North	15.1	10.9	1.4
			East	9.5	11.8	0.8
			South	8.6	9.0	1.0
			West	6.6	7.4	0.9
C0800	02M01	Waste gas compressor C-3A	North	0.0	0.0	0.8
			East	0.0	0.0	1.1
			South	0.0	0.0	0.9
			West	0.0	0.0	1.0
C0800	02M02	Waste gas compressor C-3B	North	0.0	0.0	0.9
			East	0.0	0.0	0.9
			South	0.0	0.0	0.9
			West	0.0	0.0	0.9
C0800	02T01	Waste gas surge tank TK-10	North	0.7	*	
			East	0.3	0.2	1.2
			South	0.6	0.4	1.4
			West	0.6	0.4	1.4
C0800	02T02	Waste gas decay tank TK-60A	North	0.2	*	
			East	0.1	0.1	0.8
			South	0.2	0.3	0.7
			West	0.2	0.2	1.0
C0800	02T03	Waste gas decay tank TK-60E	North	0.3	0.2	1.4
			East	0.1	0.1	0.9
			South	0.3	*	
			West	0.3	0.3	1.0
C0800	03M01	Primary vent stack	North	0.0	0.0	1.1
			East	0.0	0.0	0.8
			South	0.0	0.0	0.6
			West	0.0	0.0	0.7

* Measurement not collected due to interfering surface.

Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

SURVEY PACKAGE C0800



DURATEK

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Beta Activity

Survey Package C0800 SYSTEMS

Waste Gas Disposal System

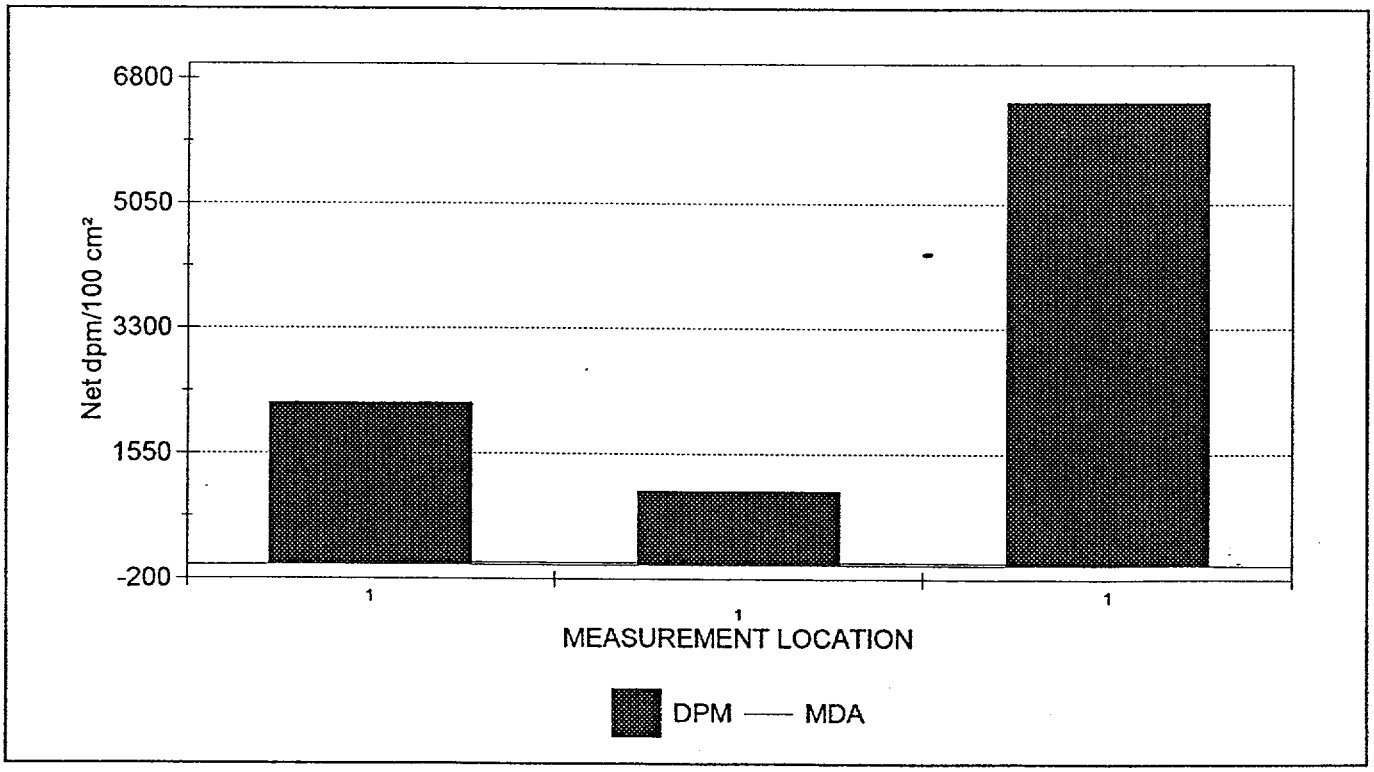
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	3,251.0
Maximum	6,470.0
Minimum	1,030.0
Standard Deviation	2,854.0
MDA	33.8

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <100 net dpm/100 cm²	YES
Results above 100 net dpm/100 cm²	3
Number of results above MDA	3



3 RESULTS ARE GRAPHED

DURATEK

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Alpha Activity

Survey Package C0800 SYSTEMS

Waste Gas Disposal System

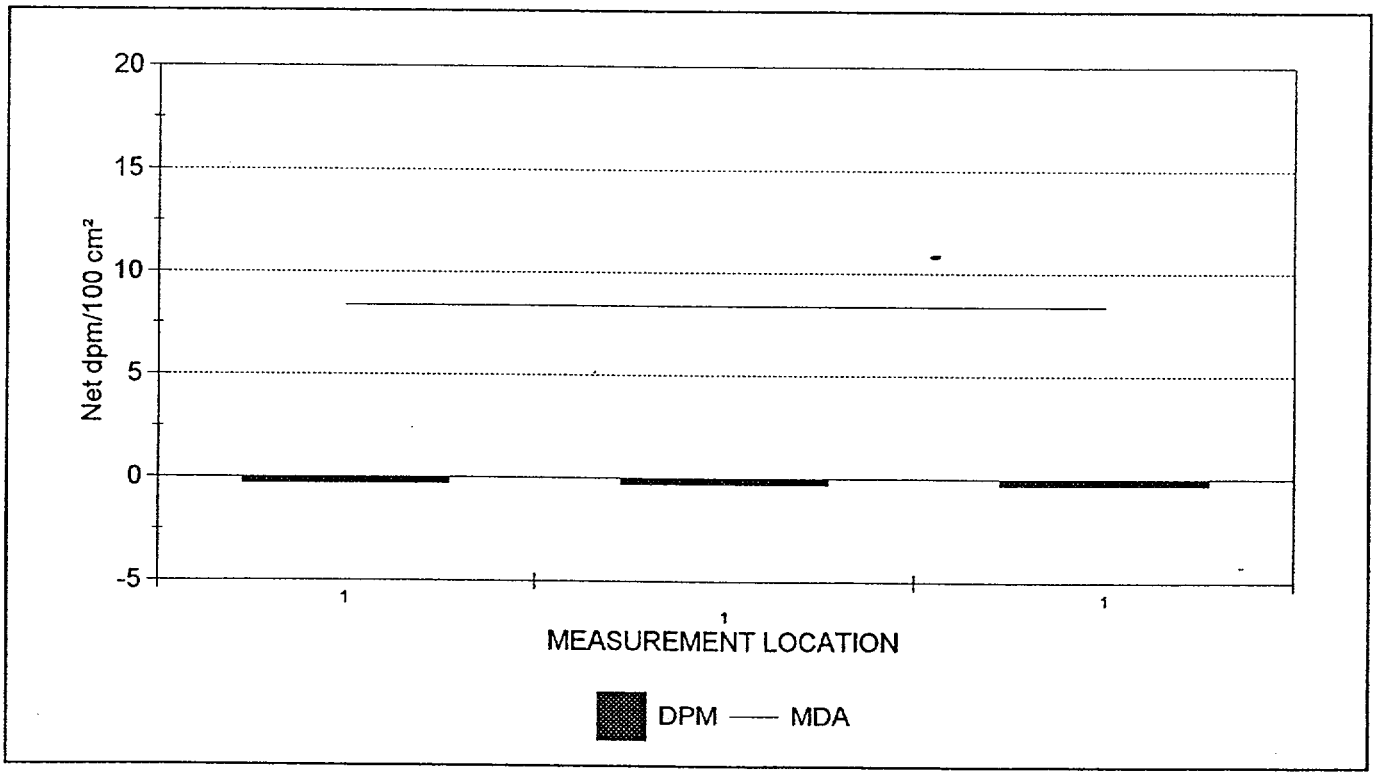
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	-0.3
Maximum	-0.3
Minimum	-0.3
Standard Deviation	0.0
MDA	8.4

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <10 net dpm/100 cm²	YES
Results above 20 net dpm/100 cm²	0
Number of results above MDA	0



3 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination

Survey Package : C0800 SYSTEMS

Waste Gas Disposal System

RESULTS LISTING - SORTED BY SURFACE CODE

XLS FILE	UNIT	SURFACE	REASON	MSRMNT LOCATION	ALPHA	BETA
SME1E131.XLS	02	V02	C01	1	-0.3	***6,470.0***
SME1E129.XLS	02	V01	C01	1	-0.3	***1,030.0***
SME1E127.XLS	01	V01	C01	1	-0.3	***2,253.1***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 100.00 dpm/100 cm² (beta activity) and/or 20.00 dpm/100 cm² (alpha activity).
3 results are listed.

DATAFILE & ALPHA - BETA COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination

Survey Package : C0800 SYSTEMS

Waste Gas Disposal System

SURVEYDATE	XLS FILE	INST ID	S/N	CAL DUE	LAB TECHNICIAN
3/16/98	SME1E127.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E129.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/16/98	SME1E131.XLS	1	15632	8/5/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Tritium Activity

Survey Package : C0800 SYSTEMS

Waste Gas Disposal System

RESULTS LISTING - SORTED BY SURFACE CODE

SAMPLE ID	SAMPLE TYPE	UNIT	SURF	REASN	MSRMNT LOCATION	MDA	TRITIUM ACTIVITY
D39	Hoppes patch	01	V01	C01	00001	39.0	***17,124.9***
D40	Hoppes patch	02	V01	C01	00001	38.7	***186.1***
D41	Hoppes patch	02	V02	C01	00001	39.0	***163.4***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 75 dpm/100 cm²,
Italic values exceed 100 dpm/100 cm².

Maine Yankee Atomic Power Plant Site Characterization

LIQUID SCINTILLATION COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination - Tritium Activity

Survey Package : C0800 SYSTEMS

Waste Gas Disposal System

SURVEYDATE	INSTRUMENT	MODEL	S/N	CAL DUE	LAB TECHNICIAN
3/5/98	Packard	2750	416221	6/16/98	LDT

CALIBRATION DATE VERIFIED AS ACCEPTABLE

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98

OUTPUT BATCH SN = 832

Survey Package C0800 SYSTEMS

Waste Gas Disposal System

UNIT : 01 SURFACE : V01 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP009	PET00011	1.0	1200	Co-57	< 62.8	62.8	0.0
				Co-60	2390.00	76.0	191.0
				Cs-134	< 140.0	140.0	0.0
				Cs-137	174.00	141.0	93.5
				K-40	< 851.0	851.0	0.0
				Mn-54	< 140.0	140.0	0.0

UNIT : 02 SURFACE : V01 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP010	PET00008	1.0	1200	Co-57	< 42.7	42.7	0.0
				Co-60	< 65.1	65.1	0.0
				Cs-134	< 75.9	75.9	0.0
				Cs-137	< 49.6	49.6	0.0
				K-40	< 927.0	927.0	0.0
				Mn-54	< 72.2	72.2	0.0

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98 OUTPUT BATCH SN = 832

Survey Package C0800 SYSTEMS

Waste Gas Disposal System

UNIT : 02 SURFACE : V02 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP011	PET00009	1.0	1200	Co-57	< 35.1	35.1	0.0
				Co-60	< 76.0	76.0	0.0
				Cs-134	< 70.6	70.6	0.0
				Cs-137	< 89.8	89.8	0.0
				K-40	< 849.0	849.0	0.0
				Mn-54	< 72.3	72.3	0.0

04/14/98

CHARACTERIZATION SUMMARY

SURVEY PACKAGE NUMBER :C0900 SYSTEMS

PACKAGE DESCRIPTION Pressurizer and PZR Relief System

SURVEY AREA DESCRIPTION

Pressurizer and Pressurizer Relief System

GENERAL HISTORICAL INFORMATION (Operational history, etc.)

The Pressurizer and Pressurizer Relief System maintained the Reactor Coolant System (RCS) operating pressure and compensated for variations in coolant volume during load changes.

SUMMARY OF CHARACTERIZATION ACTIVITIES

Survey units were established for the system by building and elevation as shown in the following Summary of Survey Units. The Surface(s) listing indicates the component name, survey surface code and, where applicable, the Maine Yankee system component number.

A total of 64 exposure rate measurements were collected at 8 component locations.

Beta scan surveys and direct measurements for total beta activity were not prescribed for this survey package.

Smear samples were collected from component interior surfaces to analyze for removable alpha and beta activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable tritium activity at 3 survey measurement locations indicated on the results listing report.

Smear samples were collected from component interior surfaces to analyze for removable plant-derived radionuclide activity by gamma spectroscopy at 3 survey measurement locations indicated on the results listing report.

The survey result statistical summaries, graphs and results listings are shown in the following individual reports including calibration summaries for the instruments used for each measurement type.

CHARACTERIZATION SURVEY RESULTS

o The average and maximum exposure rate measurement results were 41.6 mR/hr and 376 mR/hr, respectively. The ratio of the 15 cm distance measurements to the 1 meter distance measurements ranged from 0.4 to 3.8.

o There were 3 measurements for removable beta activity above MDA (maximum MDA was 5,000 dpm/100cm^2). The maximum measurement result was 360,000 dpm/100cm^2.

o None of the 3 smear measurements were analyzed for removable alpha activity.

o There were 2 measurements for removable tritium activity above MDA (138.9 dpm/100cm^2). The maximum measurement result was 229,514 dpm/100cm^2.

o Of the 3 samples analyzed by gamma spectroscopy, all samples indicated plant-derived radionuclide activity above MDA. The analysis of the samples indicated the presence of Co-58, Co-60, Cs-134, Cs-137, Mn-54, Ag-110M and Sb-125.

REFERENCES (Documents, Interviews)

Maine Yankee Drawing 1150 - FM - 90 A
Operator System Training Manual, Chapter 3

SUMMARY OF SURVEY UNIT(S)

04/14/98 OUTPUT BATCH SN = 844

PACKAGE C0900 SYSTEMS

Pressurizer and PZR Relief System

UNIT(S)	SURFACE(S)
01 - -2' Containment Building Components	H01 (Pressurizer quench tank cooler E-70) T01 (Pressurizer quench tank TK-8) U01 (Pressurizer quench tank pump P-68A) U02 (Pressurizer quench tank pump P-68B) V01 (Valve PR-34) V02 (Valve PR-35)
02 - 46' Containment Building Pressurizer Doghouse Components	V01 (3" pressurizer safety valve PR-S-11) V02 (3" power operated relief valve PR-S-14) V03 (Valve PR-S-13)
03 - 20' Containment Building Pressurizer E-2	M01 (Pressurizer E-2)
04 - 46' Containment Building Pressurizer E-2	M01 (Pressurizer E-2)

REASON(S) CHARACTERIZATION SURVEY (C01)

MATERIALS

MAT'L CODE	MATERIAL DESCRIPTION	BETA BKGD (dpm/100 cm²)
G0031	METAL - BARE (GAMMA)	0.0

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Exposure Rate Measurements

Survey Package C0900 SYSTEMS

Pressurizer and PZR Relief System

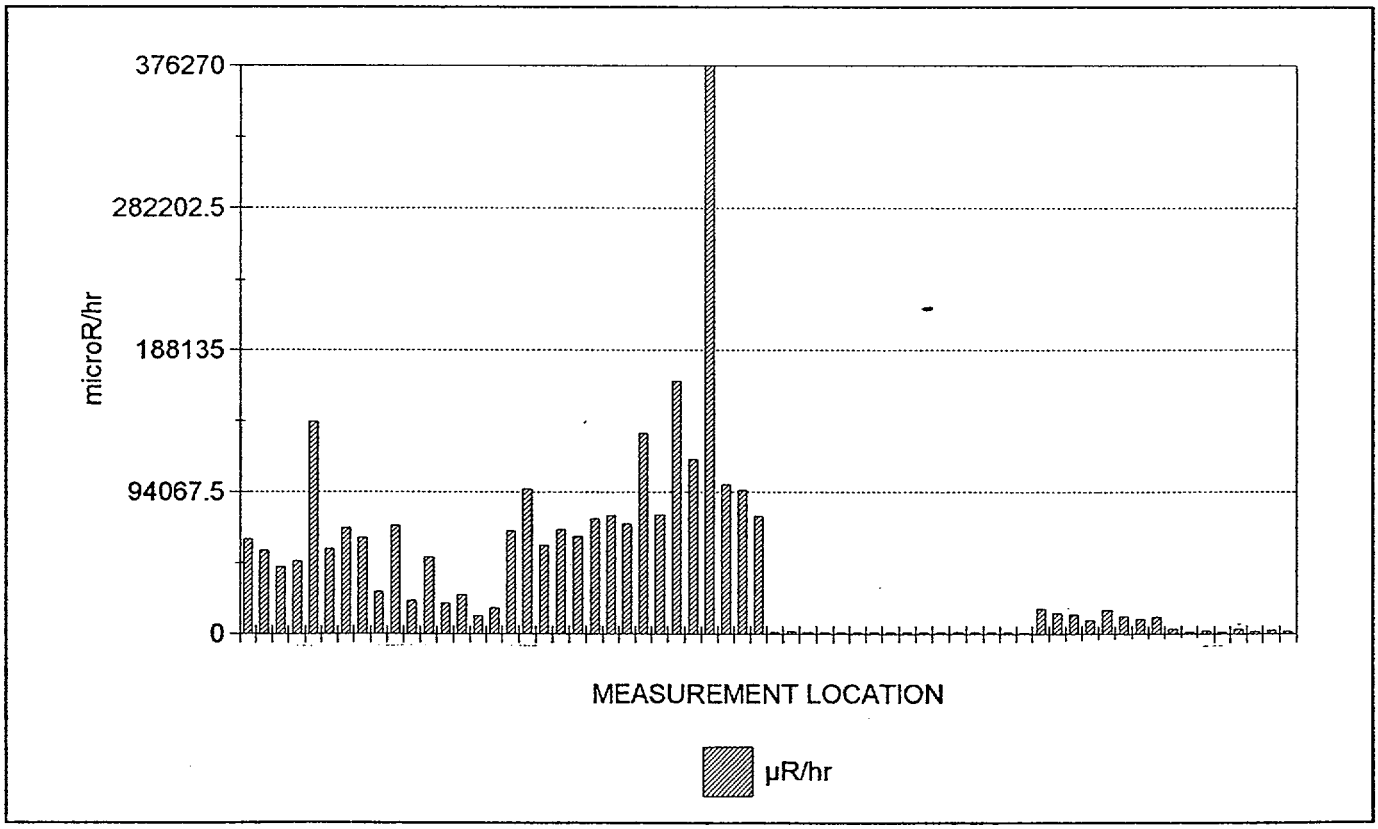
STATISTICAL SUMMARY

	µR/hr
Mean	41,636.4
Maximum	376,269.4
Minimum	1,038.2
Standard Deviation	59,187.4

Samples Reported	64
Samples Prescribed	64

TESTS PERFORMED

Samples reported satisfy samples prescribed	YES



64 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Exposure Rate Measurements

Survey Package : C0900 SYSTEMS

Pressurizer and PZR Relief System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
666 (2)	01	H01	G0031	C01	0.00	00001	***62581.3***
666 (2)	01	H01	G0031	C01	0.00	00002	***54991.3***
666 (2)	01	H01	G0031	C01	0.00	00003	***44384.7***
666 (2)	01	H01	G0031	C01	0.00	00004	***48519.3***
666 (2)	01	H01	G0031	C01	0.00	00005	***140961.2***
666 (2)	01	H01	G0031	C01	0.00	00006	***56463.4***
666 (2)	01	H01	G0031	C01	0.00	00007	***70238.5***
666 (2)	01	H01	G0031	C01	0.00	00008	***64135.1***
666 (2)	01	T01	G0031	C01	0.00	00001	***28113.7***
666 (2)	01	T01	G0031	C01	0.00	00002	***72144.9***
666 (2)	01	T01	G0031	C01	0.00	00003	***22265.3***
666 (2)	01	T01	G0031	C01	0.00	00004	***51022.4***
666 (2)	01	T01	G0031	C01	0.00	00005	***20545.4***
666 (2)	01	T01	G0031	C01	0.00	00006	***26012.7***
666 (2)	01	T01	G0031	C01	0.00	00007	***12129.2***
666 (2)	01	T01	G0031	C01	0.00	00008	***17303.0***
666 (2)	01	U01	G0031	C01	0.00	00001	***68817.9***
666 (2)	01	U01	G0031	C01	0.00	00002	***96142.0***
666 (2)	01	U01	G0031	C01	0.00	00003	***59031.0***
666 (2)	01	U01	G0031	C01	0.00	00004	***69660.0***
666 (2)	01	U01	G0031	C01	0.00	00005	***64946.9***
666 (2)	01	U01	G0031	C01	0.00	00006	***76811.3***
666 (2)	01	U01	G0031	C01	0.00	00007	***78953.6***
666 (2)	01	U01	G0031	C01	0.00	00008	***73190.5***
666 (2)	01	U02	G0031	C01	0.00	00001	***133334.2***
666 (2)	01	U02	G0031	C01	0.00	00002	79225.2
666 (2)	01	U02	G0031	C01	0.00	00003	***167377.2***
666 (2)	01	U02	G0031	C01	0.00	00004	***115752.4***
666 (2)	01	U02	G0031	C01	0.00	00005	***376269.4***
666 (2)	01	U02	G0031	C01	0.00	00006	***99367.2***
666 (2)	01	U02	G0031	C01	0.00	00007	***95379.8***
666 (2)	01	U02	G0031	C01	0.00	00008	***78367.7***
666 (2)	02	V01	G0031	C01	0.00	00001	***1364.9***
666 (2)	02	V01	G0031	C01	0.00	00002	***1614.5***
666 (2)	02	V01	G0031	C01	0.00	00003	***1193.6***
666 (2)	02	V01	G0031	C01	0.00	00004	***1433.8***
666 (2)	02	V01	G0031	C01	0.00	00005	***1378.3***
666 (2)	02	V01	G0031	C01	0.00	00006	***1319.0***
666 (2)	02	V01	G0031	C01	0.00	00007	***1294.0***
666 (2)	02	V01	G0031	C01	0.00	00008	***1256.5***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.

Survey Package : C0900 SYSTEMS

Pressurizer and PZR Relief System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
666 (2)	02	V02	G0031	C01	0.00	00001	***1103.1***
666 (2)	02	V02	G0031	C01	0.00	00002	***1164.8***
666 (2)	02	V02	G0031	C01	0.00	00003	***1084.1***
666 (2)	02	V02	G0031	C01	0.00	00004	***1141.6***
666 (2)	02	V02	G0031	C01	0.00	00005	***1182.6***
666 (2)	02	V02	G0031	C01	0.00	00006	***1070.5***
666 (2)	02	V02	G0031	C01	0.00	00007	***1092.1***
666 (2)	02	V02	G0031	C01	0.00	00008	***1038.2***
666 (2)	03	M01	G0031	C01	0.00	00001	***16999.5***
666 (2)	03	M01	G0031	C01	0.00	00002	***14099.8***
666 (2)	03	M01	G0031	C01	0.00	00003	***13347.5***
666 (2)	03	M01	G0031	C01	0.00	00004	***9235.3***
666 (2)	03	M01	G0031	C01	0.00	00005	***16173.8***
666 (2)	03	M01	G0031	C01	0.00	00006	***11900.2***
666 (2)	03	M01	G0031	C01	0.00	00007	***10248.3***
666 (2)	03	M01	G0031	C01	0.00	00008	***11323.1***
666 (2)	04	M01	G0031	C01	0.00	00001	***3224.2***
666 (2)	04	M01	G0031	C01	0.00	00002	***1325.3***
666 (2)	04	M01	G0031	C01	0.00	00003	***1909.6***
666 (2)	04	M01	G0031	C01	0.00	00004	***1471.3***
666 (2)	04	M01	G0031	C01	0.00	00005	***3452.5***
666 (2)	04	M01	G0031	C01	0.00	00006	***1711.2***
666 (2)	04	M01	G0031	C01	0.00	00007	***2539.3***
666 (2)	04	M01	G0031	C01	0.00	00008	***1601.3***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.
64 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DOWNLOAD FILE & SURVEY INSTRUMENTATION CALIBRATION SUMMARY

04/14/98

Exposure Rate Measurements

Survey Package : C0900 SYSTEMS

Pressurizer and PZR Relief System

SURVEY		M2350		DETECTOR			
DATE	FILE #	INST S/N	CAL DUE	MODEL	S/N	CAL DUE	TECHNICIAN
3/18/98	666 (2)	126185	3/20/98	44-38	075082	7/23/98	AOK2982

CALIBRATION DATES VERIFIED AS ACCEPTABLE

Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

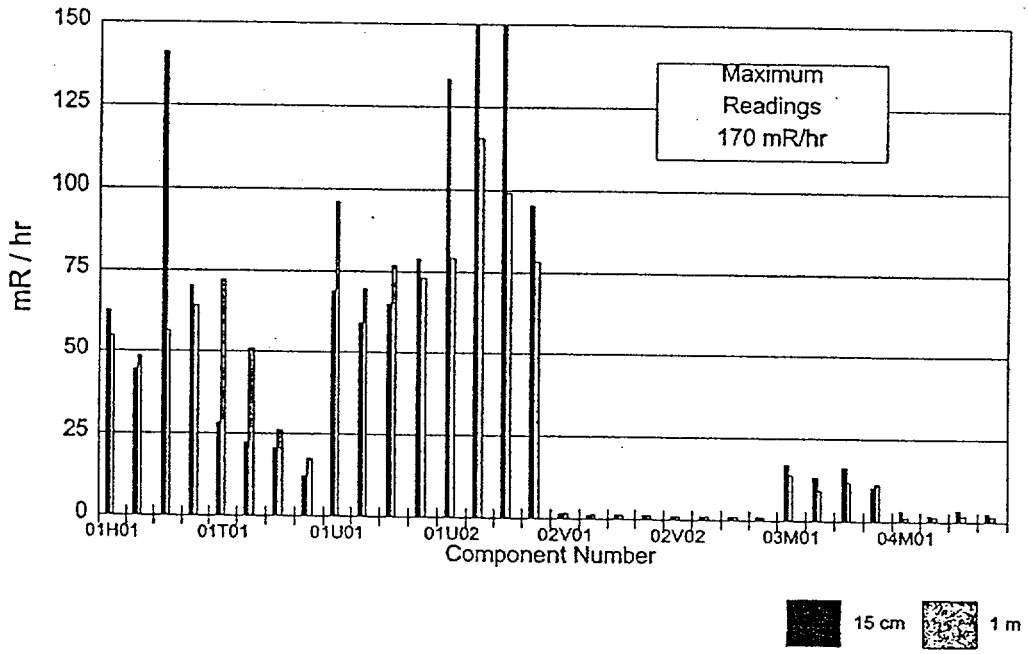
SURVEY PACKAGE C0900

Package Number	Component Number	Component Description	Direction	15 cm mR/hr	1 meter mR/hr	Ratio of 15 cm to 1 meter
C0900	01H01	Pressurizer quench tank cooler E-70	North	62.6	55.0	1.1
			East	44.4	48.5	0.9
			South	141.0	56.5	2.5
			West	70.2	64.1	1.1
C0900	01T01	Pressurizer quench tank TK-8	North	28.1	72.1	0.4
			East	22.3	51.0	0.4
			South	20.5	26.0	0.8
			West	12.1	17.3	0.7
C0900	01U01	Pressurizer quench tank pump P-68A	North	68.8	96.1	0.7
			East	59.0	69.7	0.8
			South	64.9	76.8	0.8
			West	79.0	73.2	1.1
C0900	01U02	Pressurizer quench tank pump P-68B	North	133.3	79.2	1.7
			East	167.4	115.8	1.4
			South	376.3	99.4	3.8
			West	95.4	78.4	1.2
C0900	02V01	3" pressurizer safety valve PR-S-11	North	1.4	1.6	0.8
			East	1.2	1.4	0.8
			South	1.4	1.3	1.0
			West	1.3	1.3	1.0
C0900	02V02	3" power operated relief valve PR-S-14	North	1.1	1.2	0.9
			East	1.1	1.1	0.9
			South	1.2	1.1	1.1
			West	1.1	1.0	1.1
C0900	03M01	Pressurizer E-2	North	17.0	14.1	1.2
			East	13.3	9.2	1.4
			South	16.2	11.9	1.4
			West	10.2	11.3	0.9
C0900	04M01	Pressurizer E-2	North	3.2	1.3	2.4
			East	1.9	1.5	1.3
			South	3.5	1.7	2.0
			West	2.5	1.6	1.6

Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

SURVEY PACKAGE C0900

Exposure Rates - 15 cm and 1 meter



DURATEK

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Removable Contamination - Gross Beta Activity

Survey Package C0900 SYSTEMS

Pressurizer and PZR Relief System

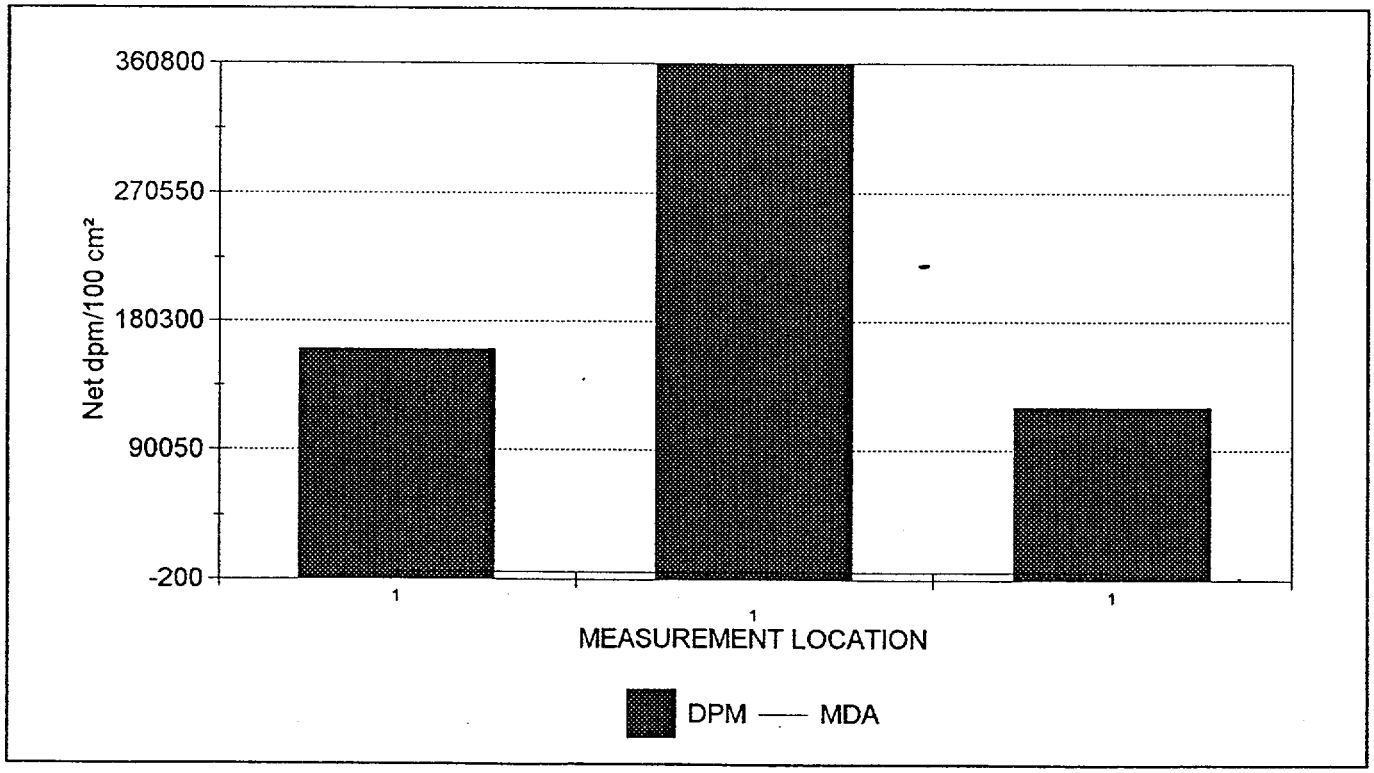
STATISTICAL SUMMARY

	Net dpm/100 cm²
Mean	213,333.3
Maximum	360,000.0
Minimum	120,000.0
Standard Deviation	128,582.0
MDA	5,000.0

Samples Reported	3
Samples Prescribed	9

TESTS PERFORMED

MDA <100 net dpm/100 cm²	NO
Results above 100 net dpm/100 cm²	3
Number of results above MDA	3



3 RESULTS ARE GRAPHED

Survey Package : C0900 SYSTEMS

Pressurizer and PZR Relief System

RESULTS LISTING - SORTED BY SURFACE CODE

XLS FILE	UNIT	SURFACE	REASON	MSRMNT LOCATION	ALPHA	BETA
RM-14DATA12	02	V03	C01	1		***120,000.0***
RM-14DATA11	01	V02	C01	1		***360,000.0***
RM-14DATA10	01	V01	C01	1		***160,000.0***

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 100.00 dpm/100 cm² (beta activity) and/or 20.00 dpm/100 cm² (alpha activity).
3 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DATAFILE & ALPHA - BETA COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination

Survey Package : C0900 SYSTEMS

Pressurizer and PZR Relief System

SURVEYDATE	XLS FILE	INST ID	S/N	CAL DUE	LAB TECHNICIAN
3/28/98	RM-14DATA10	3	8263	5/26/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/28/98	RM-14DATA11	3	8263	5/26/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	
3/28/98	RM-14DATA12	3	8263	5/26/98	JWD
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	

DURATEK

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Removable Contamination - Tritium Activity

Survey Package : C0900 SYSTEMS

Pressurizer and PZR Relief System

RESULTS LISTING - SORTED BY SURFACE CODE

SAMPLE ID	SAMPLE TYPE	UNIT	SURF	REASN	MSRMNT LOCATION	MDA	TRITIUM ACTIVITY
D68	Hoppes patch	01	V01	C01	00001	138.9	***229,514.***
D69	Hoppes patch	01	V02	C01	00001	138.9	***17,879.5***
D70	Hoppes patch	02	V03	C01	00001	138.9	9.5

NOTES: Activity reported in net dpm/100 cm².
Underlined values exceed the associated MDA.
Bold values exceed 75 dpm/100 cm²,
Italic values exceed 100 dpm/100 cm².

Maine Yankee Atomic Power Plant Site Characterization

LIQUID SCINTILLATION COUNTER CALIBRATION SUMMARY

04/14/98

Removable Contamination - Tritium Activity

Survey Package: C0900 SYSTEMS

Pressurizer and PZR Relief System

SURVEYDATE	INSTRUMENT	MODEL	S/N	CAL DUE	LAB TECHNICIAN
4/6/98	Packard	2750	416221	6/16/98	LDT
				CALIBRATION DATE VERIFIED AS ACCEPTABLE	

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98 OUTPUT BATCH SN = 844

Survey Package C0900 SYSTEMS

Pressurizer and PZR Relief System

UNIT : 01 SURFACE : V01 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP26	PET00041	1.0	1800	Ag-110M	5870.00	467.0	392.0
				Co-57	< 217.0	217.0	0.0
				Co-58	3760.00	726.0	520.0
				Co-60	88000.00	533.0	8,090.0
				Cs-134	818.00	423.0	171.0
				Cs-137	8580.00	477.0	750.0
				K-40	< 1500.0	1,500.0	0.0
				Mn-54	1280.00	534.0	341.0
				Sb-125	7910.00	1,330.0	750.0

UNIT : 01 SURFACE : V02 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP27	PET00044	1.0	1800	Co-57	< 423.0	423.0	0.0
				Co-58	833.00	1,180.0	704.0
				Co-60	96000.00	982.0	5,500.0
				Cs-134	3260.00	819.0	471.0
				Cs-137	61500.00	830.0	4,200.0
				K-40	< 2310.0	2,310.0	0.0
				Mn-54	< 1450.0	1,450.0	0.0

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 3

04/14/98 OUTPUT BATCH SN = 844

Survey Package C0900 SYSTEMS

Pressurizer and PZR Relief System

UNIT : 02 SURFACE : V03 REASON : C01 ANALYSIS TYPE CODE : LAB05

SAMPLE TYPE OR SURFACE SAMPLED: Valve
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MYP28	PET00045	1.0	1800	Co-57	< 130.0	130.0	0.0
				Co-58	834.00	382.0	248.0
				Co-60	53600.00	287.0	2,370.0
				Cs-134	< 301.0	301.0	0.0
				Cs-137	< 359.0	359.0	0.0
				K-40	< 889.0	889.0	0.0
				Mn-54	< 444.0	444.0	0.0

Version 3.0.8 - 4/3/98

JLM

DBACORR Documentation
:aProgDBACORR:R_GSPEC.RSL

04/14/98

CHARACTERIZATION SUMMARY

SURVEY PACKAGE NUMBER :C1100

SYSTEMS

PACKAGE DESCRIPTION

Reactor Coolant System

SURVEY AREA DESCRIPTION

Reactor Coolant System

GENERAL HISTORICAL INFORMATION (Operational history, etc.)

The primary function of the Reactor Coolant System (RCS) was to transfer heat from the reactor core to secondary systems via the steam generators. The water acted as a neutron moderator and reflector and as a solvent for the boric acid used in chemical shim control. The coolant provided a barrier against the release of radioactivity generated in the core to the environment.

SUMMARY OF CHARACTERIZATION ACTIVITIES

Survey units were established for the system by building and elevation as shown in the following Summary of Survey Units. The Surface(s) listing indicates the component name, survey surface code and, where applicable, the Maine Yankee system component number.

A total of 48 exposure rate measurements were collected at 6 component locations.

Beta scan surveys and direct measurements for total beta activity were not prescribed for this survey package.

No smear samples were collected for removable alpha and beta activity.

No smear samples were collected for removable tritium activity.

No smear samples were collected for removable plant-derived radionuclide activity by gamma spectroscopy.

The survey result statistical summaries, graphs and results listings are shown in the following individual reports including calibration summaries for the instruments used for each measurement type.

CHARACTERIZATION SURVEY RESULTS

o The average and maximum exposure rate measurement results were 53.6 mR/hr and 181.3 mR/hr, respectively. The ratio of the 15 cm distance measurements to the 1 meter distance measurements ranged from 0.5 to 1.5.

REFERENCES (Documents, Interviews)

Maine Yankee Drawing 1150 - FM - 90 A, 91 A
Professional Staff Orientation Manual, Chapter 2

Maine Yankee Atomic Power Plant Site Characterization

SUMMARY OF SURVEY UNIT(S)

04/14/98 OUTPUT BATCH SN = 846

PACKAGE C1100 SYSTEMS

Reactor Coolant System

UNIT(S)	SURFACE(S)
01 - -2' Containment Building Components	P01 (Reactor coolant system loop 1 hot leg) P02 (Reactor coolant system loop 2 hot leg) P03 (Reactor coolant system loop 3 hot leg)
02 - 13' Containment Building Components	U01 (Reactor Coolant Pump P-1-1) U02 (Reactor Coolant Pump P-1-2) U03 (Reactor Coolant Pump P-1-3)

REASON(S) CHARACTERIZATION SURVEY (C01)

MATERIALS

MAT'L CODE	MATERIAL DESCRIPTION	BETA BKGD (dpm/100 cm²)
G0031	METAL - BARE (GAMMA)	0.0

DURATEK

Maine Yankee Atomic Power Plant Site Characterization

04/14/98

Exposure Rate Measurements

Survey Package C1100 SYSTEMS

Reactor Coolant System

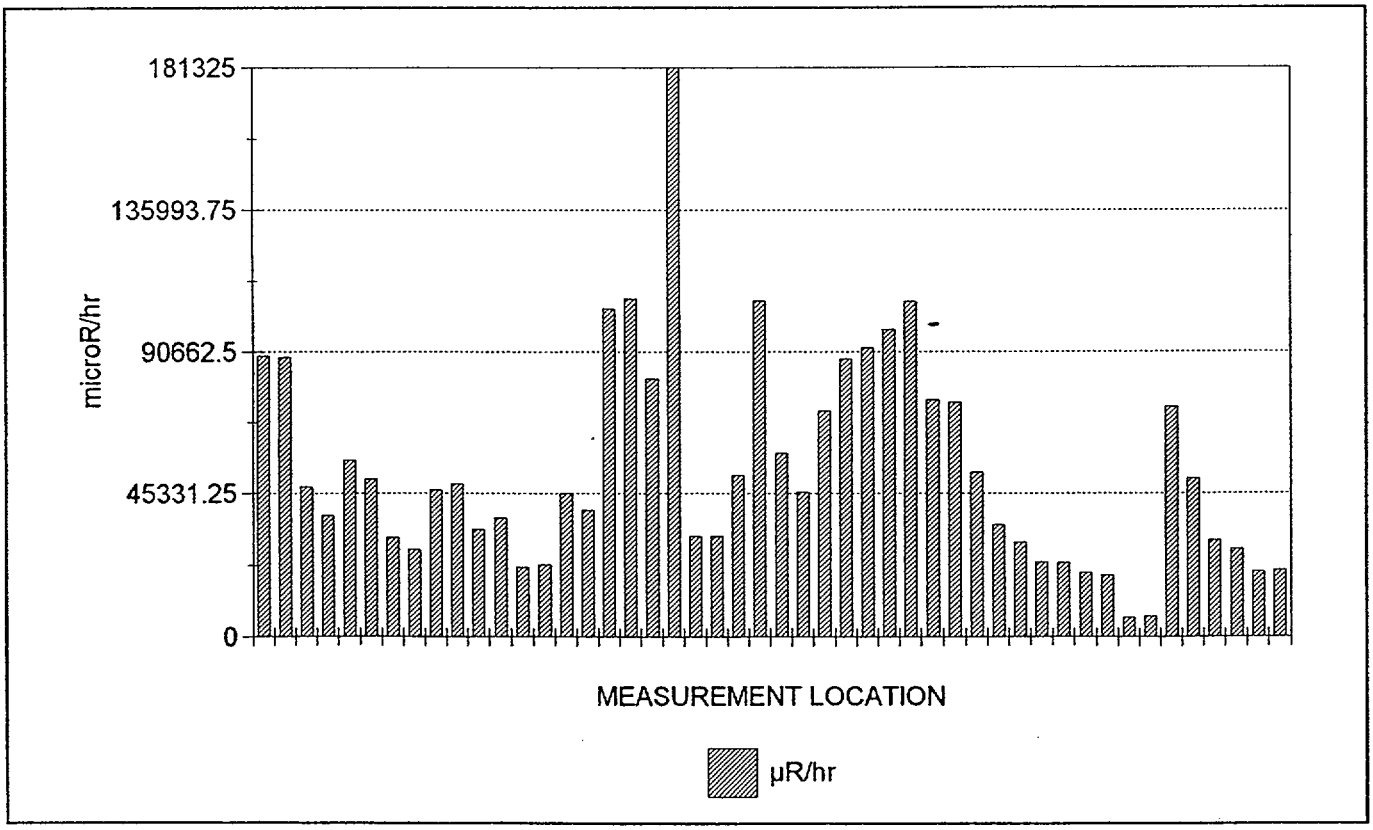
STATISTICAL SUMMARY

	µR/hr
Mean	53,580.6
Maximum	181,322.8
Minimum	6,043.9
Standard Deviation	34,274.7

Samples Reported	48
Samples Prescribed	48

TESTS PERFORMED

Samples reported satisfy samples prescribed	YES



48 RESULTS ARE GRAPHED

Maine Yankee Atomic Power Plant Site Characterization

04/14/98 Exposure Rate Measurements

Survey Package: C1100 SYSTEMS

Reactor Coolant System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
671 (2)	01	P01	G0031	C01	0.00	00001	***89262.0***
671 (2)	01	P01	G0031	C01	0.00	00002	***88842.7***
671 (2)	01	P01	G0031	C01	0.00	00003	***47365.0***
671 (2)	01	P01	G0031	C01	0.00	00004	***38513.7***
671 (2)	01	P01	G0031	C01	0.00	00005	***55919.3***
671 (2)	01	P01	G0031	C01	0.00	00006	***49870.2***
671 (2)	01	P01	G0031	C01	0.00	00007	***31297.7***
671 (2)	01	P01	G0031	C01	0.00	00008	***27679.4***
671 (2)	01	P02	G0031	C01	0.00	00001	***46482.2***
671 (2)	01	P02	G0031	C01	0.00	00002	***48338.2***
671 (2)	01	P02	G0031	C01	0.00	00003	***33951.4***
671 (2)	01	P02	G0031	C01	0.00	00004	***37617.5***
671 (2)	01	P02	G0031	C01	0.00	00005	***22059.6***
671 (2)	01	P02	G0031	C01	0.00	00006	***22934.2***
671 (2)	01	P02	G0031	C01	0.00	00007	***45373.7***
671 (2)	01	P02	G0031	C01	0.00	00008	***40118.5***
671 (2)	01	P03	G0031	C01	0.00	00001	***104443.8***
671 (2)	01	P03	G0031	C01	0.00	00002	***107605.3***
671 (2)	01	P03	G0031	C01	0.00	00003	***81942.0***
671 (2)	01	P03	G0031	C01	0.00	00004	***181322.8***
671 (2)	01	P03	G0031	C01	0.00	00005	***31616.2***
671 (2)	01	P03	G0031	C01	0.00	00006	***31616.2***
671 (2)	01	P03	G0031	C01	0.00	00007	***51125.3***
671 (2)	01	P03	G0031	C01	0.00	00008	***106845.5***

REMAINING RESULTS PRINTED ON NEXT PAGE

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.

Survey Package: C1100 SYSTEMS

Reactor Coolant System

RESULTS LISTING - SORTED BY SURFACE CODE

FILE #	UNIT	SURFACE	MATERIAL	REASON	COUNT TIME	MSRMNT LOCATION	RESULT
671 (2)	02	U01	G0031	C01	0.00	00001	***58307.9***
671 (2)	02	U01	G0031	C01	0.00	00002	***45707.2***
671 (2)	02	U01	G0031	C01	0.00	00003	***71674.5***
671 (2)	02	U01	G0031	C01	0.00	00004	***88418.3***
671 (2)	02	U01	G0031	C01	0.00	00005	***91764.4***
671 (2)	02	U01	G0031	C01	0.00	00006	***97634.3***
671 (2)	02	U01	G0031	C01	0.00	00007	***106658.5***
671 (2)	02	U01	G0031	C01	0.00	00008	***75200.4***
671 (2)	02	U02	G0031	C01	0.00	00001	***74359.9***
671 (2)	02	U02	G0031	C01	0.00	00002	***52199.8***
671 (2)	02	U02	G0031	C01	0.00	00003	***35337.9***
671 (2)	02	U02	G0031	C01	0.00	00004	***29922.9***
671 (2)	02	U02	G0031	C01	0.00	00005	***23779.7***
671 (2)	02	U02	G0031	C01	0.00	00006	***23512.2***
671 (2)	02	U02	G0031	C01	0.00	00007	***20320.5***
671 (2)	02	U02	G0031	C01	0.00	00008	***19507.2***
671 (2)	02	U03	G0031	C01	0.00	00001	***6043.9***
671 (2)	02	U03	G0031	C01	0.00	00002	***6461.5***
671 (2)	02	U03	G0031	C01	0.00	00003	***72915.1***
671 (2)	02	U03	G0031	C01	0.00	00004	***50148.2***
671 (2)	02	U03	G0031	C01	0.00	00005	***30488.5***
671 (2)	02	U03	G0031	C01	0.00	00006	***27764.1***
671 (2)	02	U03	G0031	C01	0.00	00007	***20568.7***
671 (2)	02	U03	G0031	C01	0.00	00008	***21028.8***

NOTES: Exposure rates reported in net µR/hr. Count times are reported in seconds.
Underlined results did not meet the minimum required count time.
Bold values exceed 15 µR/hr.
48 results are listed.

Maine Yankee Atomic Power Plant Site Characterization

DOWNLOAD FILE & SURVEY INSTRUMENTATION CALIBRATION SUMMARY

04/14/98

Exposure Rate Measurements

Survey Package : C1100 SYSTEMS

Reactor Coolant System

SURVEY		M2350		DETECTOR			
DATE	FILE #	INST S/N	CAL DUE	MODEL	S/N	CAL DUE	TECHNICIAN
3/24/98	671 (2)	95349	4/15/98	44-38	PR088919	7/23/98	AOK2982

CALIBRATION DATES VERIFIED AS ACCEPTABLE

DURATEK

Maine Yankee Atomic Power Plant Site Characterization
Exposure Rate Distance Ratios

SURVEY PACKAGE C01100

Package Number	Component Number	Component Description	Direction	15 cm mR/hr	1 meter mR/hr	Ratio of 15 cm to 1 meter
C1100	01P01	Reactor coolant system loop 1 hot leg	North	89.3	88.8	1.0
			East	47.4	38.5	1.2
			South	55.9	49.9	1.1
			West	31.3	27.7	1.1
C1100	01P02	Reactor coolant system loop 2 hot leg	North	46.5	48.3	1.0
			East	34.0	37.6	0.9
			South	22.1	22.9	1.0
			West	45.4	40.1	1.1
C1100	01P03	Reactor coolant system loop 3 hot leg	North	104.4	107.6	1.0
			East	81.9	181.3	0.5
			South	31.6	31.6	1.0
			West	51.1	106.8	0.5
C1100	02U01	Reactor Coolant Pump P-1-1	North	58.3	45.7	1.3
			East	71.7	88.4	0.8
			South	91.8	97.6	0.9
			West	106.7	75.2	1.4
C1100	02U02	Reactor Coolant Pump P-1-2	North	74.4	52.2	1.4
			East	35.3	29.9	1.2
			South	23.8	23.5	1.0
			West	20.3	19.5	1.0
C1100	02U03	Reactor Coolant Pump P-1-3	North	6.0	6.5	0.9
			East	72.9	50.1	1.5
			South	30.5	27.8	1.1
			West	20.6	21.0	1.0

Exposure Rates - 15 cm and 1 meter