Nuclear Ship (NS) *SAVANNAH* Decommissioning (DECON) Project

Pre-Submittal Meeting
Final Status Survey Reports
June 18, 2025

Office: Project Manager, *NS SAVANNAH* DECON (MAR-642)
Program Manager: Erhard W. Koehler, Senior Technical Advisor
Date Issued: June 11, 2025

Current Decommissioning (DECON) Status

U.S. DEPARTMENT OF TRANSPORTATION
MARITIME ADMINISTRATION

The DECON project is in Phase III: License Termination

Completed Milestones:

- NRC Confirmatory Surveys completed, July 2024.
- License Termination Plan (LTP) approved by NRC, January 2025.
- Final Status Surveys (FSS) completed, January 2025.

Upcoming Milestones:

- FSS report submissions: July 2025 – Oct. 2025. There will be a total of five FSS reports.
- License termination anticipated: FY 2026.
- Final Demobilization and Vessel Redelivery: Approx. 6 months after LT

Project Background

Project Background

- As described in MARAD's PSDAR and LTP, the objective of this project is to terminate license NS-1 without restrictions, to permit disposition of the ship through any of the means available to MARAD. These include preservation, shipbreaking and artificial reefing.
- NSS is a National Historic Landmark, whose decommissioning and disposition are subject to consultation under the National Historic Preservation Act. The LTP contains detailed discussions of MARAD's work to conform landmark protections to the NRC decommissioning requirements and license termination criteria.
- Significant structures have been preserved. The FSS campaign and resulting reports demonstrate that these preservation efforts comply with the license termination criteria.

FSS Program Overview

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Program Overview

- There are 69 survey units planned for submittal.
- The LTP originally had 76 survey units. During the NRC LTP review, 9 survey units were removed as recorded in the October 16, 2024 second round RAI response. These units covered systems that have been removed in their entirety.
- MARAD added survey units and subdivided other units during the development of survey plans.
- All units employed a combination of direct measurements and scans using standard hand-held detectors. 14 of the total also employed an In Situ Object Counting System (ISOCS).

FSS Report – Overview

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Report Overview

- Each report will summarize the results of the included Survey Unit Release Records (SURRs).
- The SURRs will be attachments to the report.
- SURRs provide detailed description of the survey design, survey results and data assessments.

FSS Report – Structure

Each report is structured as below. This presentation focuses on Report 1 of 5, and will describe each section in that context. Later slides provide a summary list of the contents for reports 2–5, a discussion of the exterior hull survey, and note those units which include ISOCS.

- Introduction
- Final Status Survey Program Overview
- Ship and Survey Unit Information
- Summary of Survey Results
- FSS Final Report Summary
- References
- Attachments (SURRs)

FSS Report – Introduction

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Purpose: To provide a summary of the survey results and overall conclusions which demonstrate that portions of the Nuclear Ship *SAVANNAH* (NSS) meet the 25 mrem per year release criterion as established in 10 CFR 20.1402, Radiological Criteria for Unrestricted Use.

- *To ensure that the NSS meets these requirements, MARAD has established an administrative limit of less than or equal to 15 mrem (0.15 mSv) per year of residual radioactivity that is distinguishable from background radiation results in a TEDE to an average member of the critical group. This administrative limit includes as low as reasonably achievable (ALARA) considerations.*

FSS Report – Program Overview

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This section of the report discusses the following topics:

- Survey Planning
- Survey Design
- Survey Implementation
- Radiological Release Criteria
- Calibration Sources and Efficiencies
- Survey Data Assessment
- Quality Assurance and Quality Control Measures
  - Technician Training
  - Instrumentation
  - Periodic Surveillance

FSS Report – Ship and Survey Unit Information

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The Ship and Survey Unit Information section is broken down into two parts. The Ship Description section includes a short summary of the detailed description in the LTP.

FSS Report – Ship and Survey Unit Information

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The Survey Unit Information section describes the units associated with each report. The following list is the survey units from Report 1.

Survey Unit Descriptions (All are Class 1):

STR-101-01	Containment Vessel (CV) – 1st Level (Tanktop), Starboard Side
STR-101-02	Containment Vessel (CV) – 1st Level (Tanktop), Port Side
STR-102	Containment Vessel (CV) – 2nd Level (Flat)
STR-103	Containment Vessel (CV) – 3rd Level (D Deck)
STR-104	Containment Vessel (CV) – 4th Level (C Deck)
STR-105-01	Reactor Compartment – Lower Level (5’-23’) Starboard Half
STR-105-02	Reactor Compartment – Lower Level (5’-23’) Port Half

FSS Report – Ship and Survey Unit Information

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Survey Unit Descriptions (All are Class 1, except as noted):

STR-105-03	Reactor Compartment – Lower Level (5’-23’) Drain Wells
STR-108	Starboard Charging Pump Room
STR-109	Auxiliary Access Trunk, C-Deck, Cold Water Chemistry Lab (Port) and Radiation Monitoring Room (Stbd)
STR-207	Health Physics Lab (Class 2)
STR-301	Navigation Bridge Deck - interior surfaces (Class 3)
SYS-112	Primary Pressurizer System (PE) including retained portions of the pressurizer
SYS-117-01	Neutron Shield Tank wall located in the CV
SYS-117-02	Fuel Transfer Tank wall located in the CV

FSS Report – Ship and Survey Unit Information

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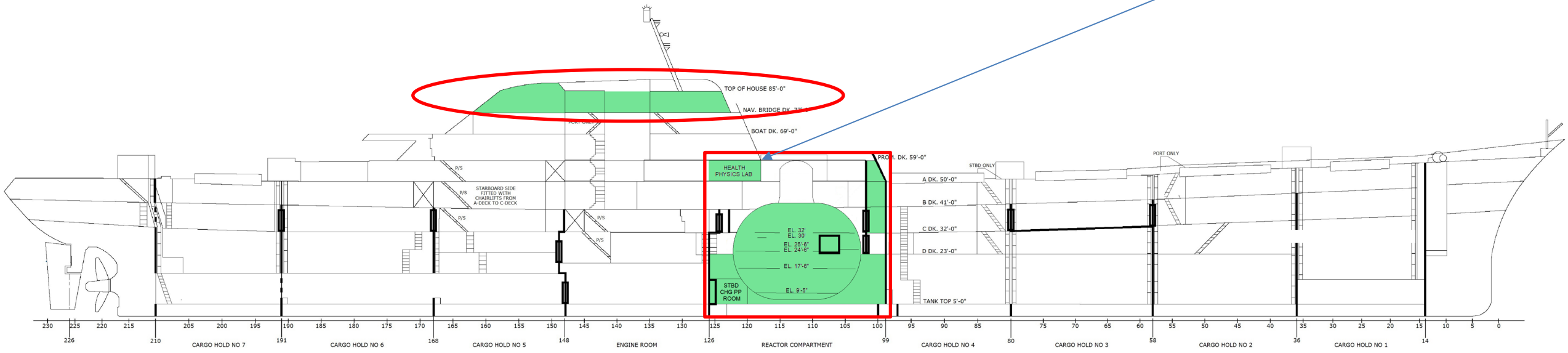
Each report will include a graphical description of the location of its included survey units.

‘Big Picture’ of Report 1 Survey Unit Locations (14 of 15 are inside the red rectangle)

STR-301, Navigation Bridge Deck - interior surfaces (red oval)

STR-207, HP lab



FSS Report – Ship and Survey Unit Information

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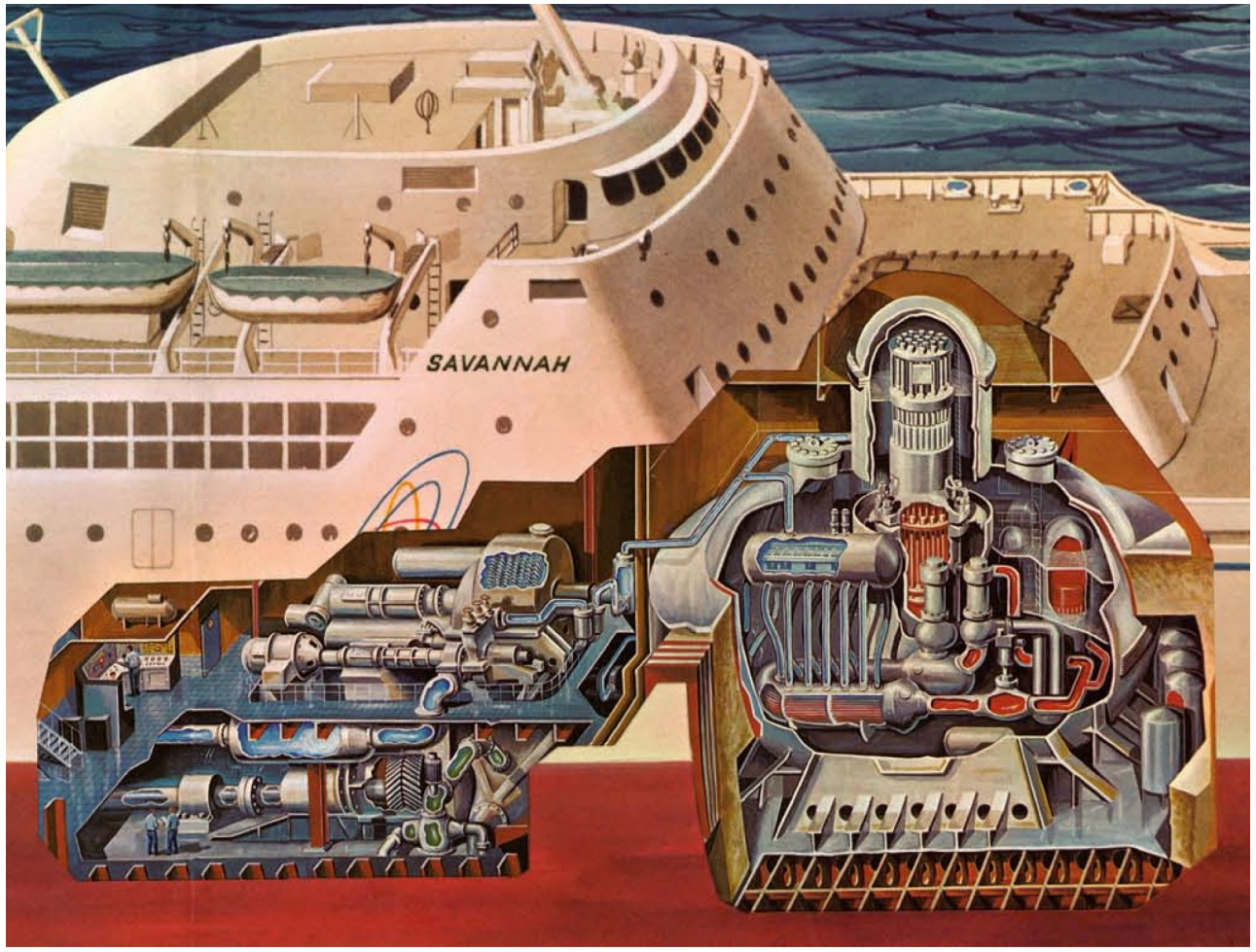
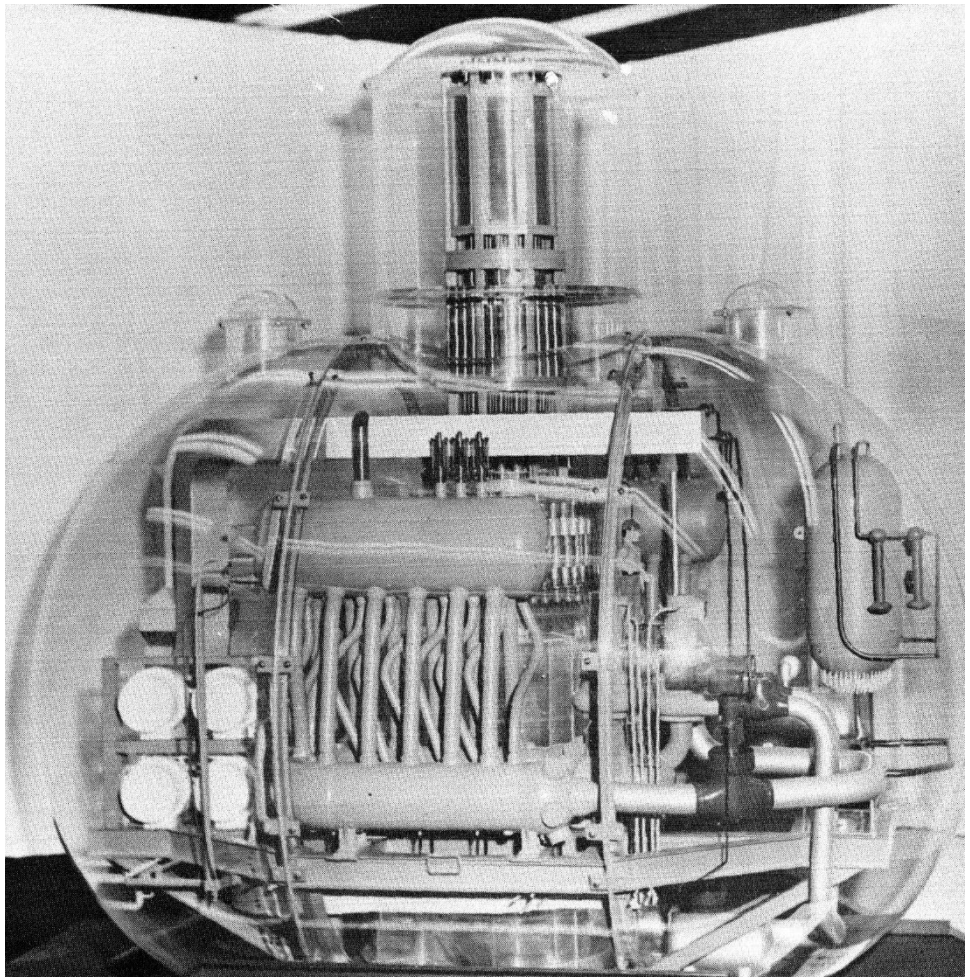
Report 1 'Big Picture' – Containment, Reactor Compartment and Engine Room (Fr. 99-148)





FSS Report 1 of 5 Summary of Survey Results

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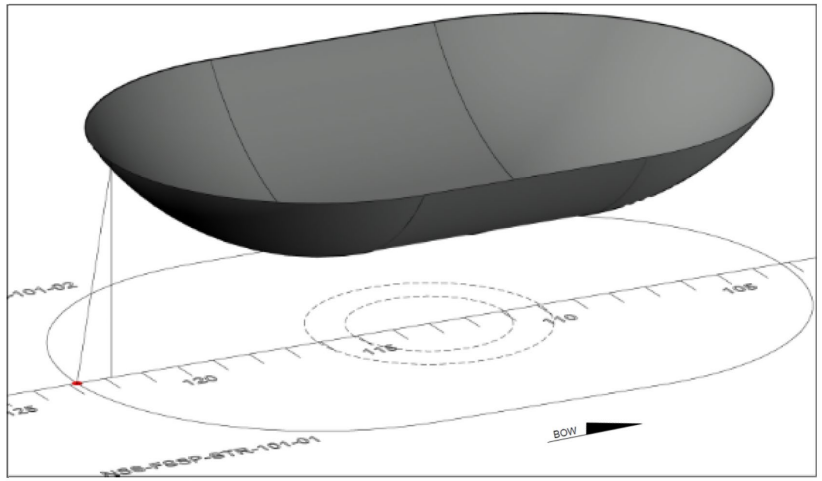
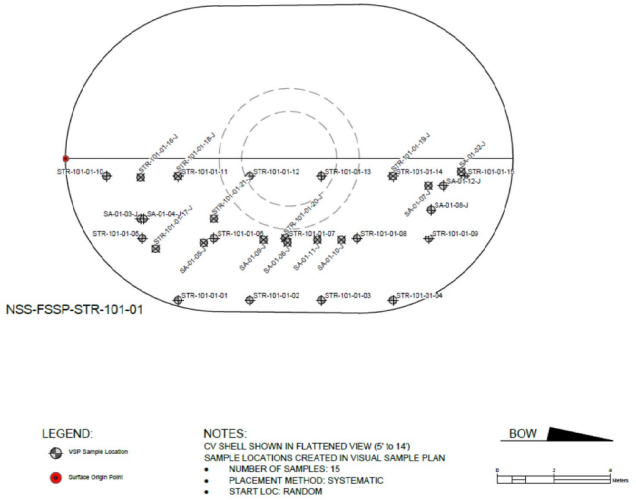
Survey Unit Location: STR-101-01, Containment Vessel (CV) – 1st Level (Tanktop), Starboard Side

Internal surfaces of the starboard side CV shell. Includes 1st-level deck and bulkheads up to the 14-foot elevation





Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **2.05 mrem/yr**

Remediation: Four 3 ft by 1 ft areas. Applied peel away. Follow-up surveys < Operational $DCGL_W$.

FSS Report 1 of 5 Summary of Survey Results

U.S. DEPARTMENT OF TRANSPORTATION
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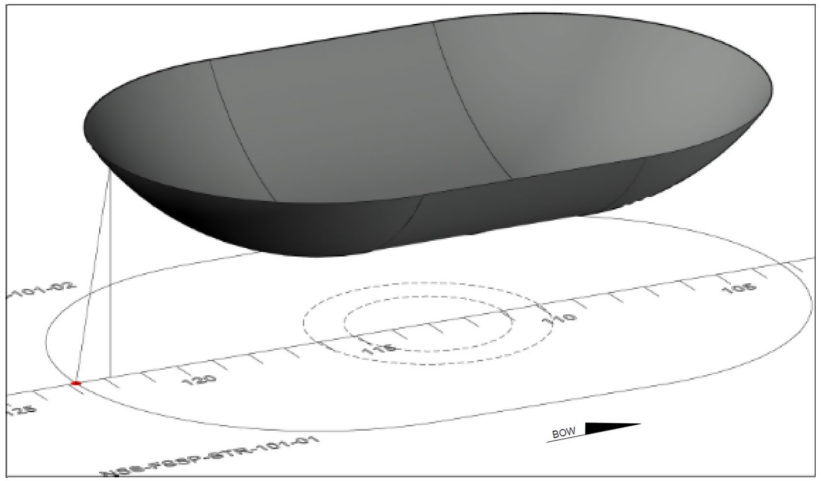
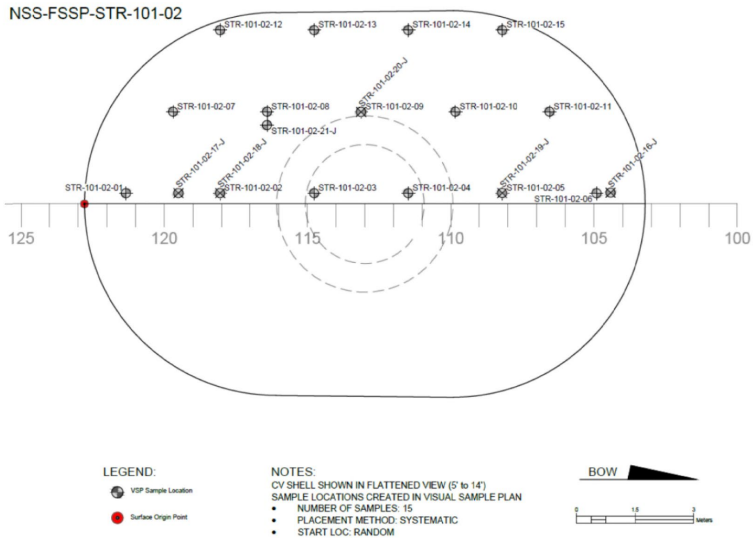
Survey Unit Location: STR-101-02, Containment Vessel (CV) – 1st Level (Tanktop), Port Side

Internal surfaces of the port side CV shell. Includes 1st-level deck and bulkheads up to the 14-foot elevation





Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **1.12 mrem/yr**

Remediation: None. One survey triggered follow-up survey. Follow-up survey < Operational $DCGL_W$.

FSS Report 1 of 5 Summary of Survey Results

U.S. DEPARTMENT OF TRANSPORTATION
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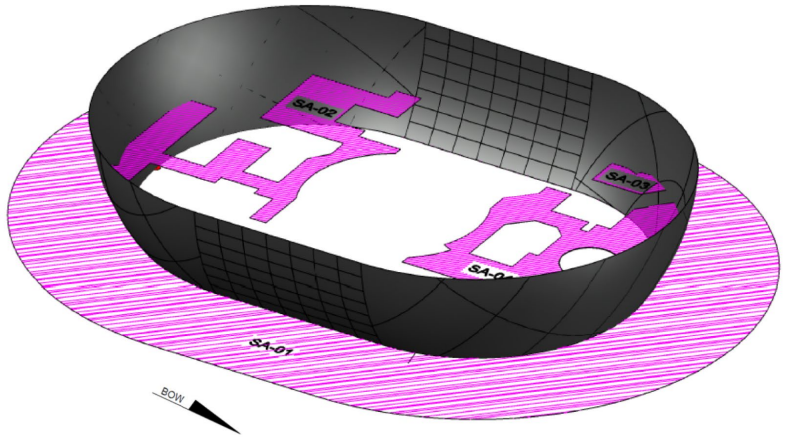
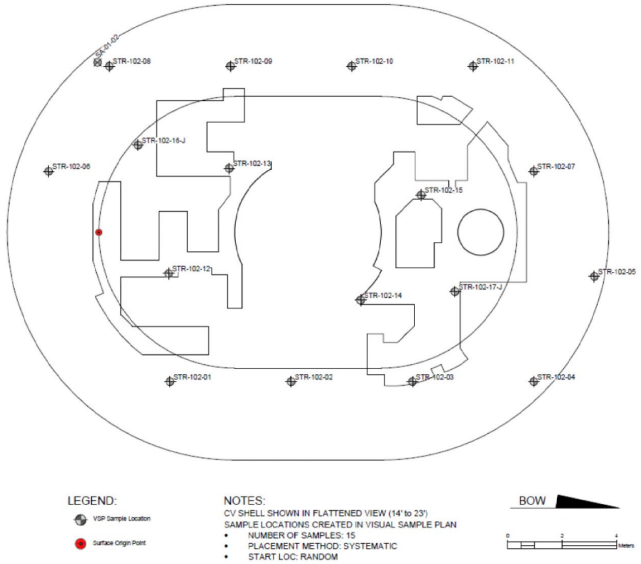
Survey Unit Location: STR-102, Containment Vessel (CV) – 2nd Level (Flat)

Internal surfaces of the CV shell bulkhead and deck/new fiberglass grating, Includes access to steam generator (U tube) manways and pressurizer heaters.





Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **0.88 mrem/yr**

Remediation: Two surveys triggered follow-up surveys. One additional required remediation by Masslinn cloth. Follow-up surveys < Operational $DCGL_W$.

FSS Report 1 of 5 Summary of Survey Results

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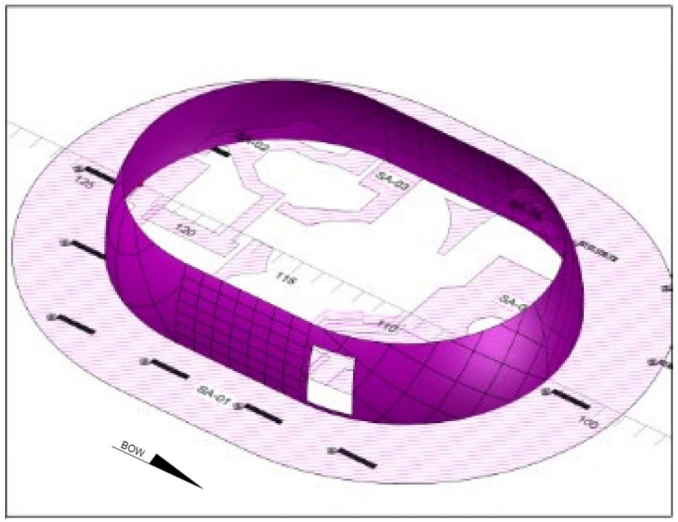
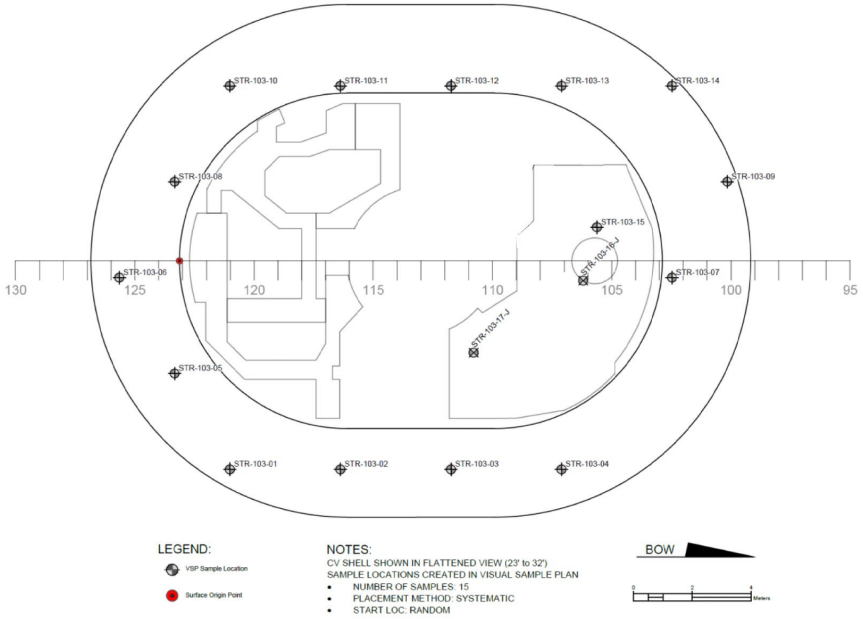
Survey Unit Location: STR-103, Containment Vessel (CV) – 3rd Level (D Deck)

Internal surfaces of the CV shell bulkhead and deck/new fiberglass grating, Includes access to steam generator (steam side) manways, pressurizer and reactor coolant pumps.





Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **0.39 mrem/yr**

Remediation: None. No investigation levels were triggered.

FSS Report 1 of 5 Summary of Survey Results

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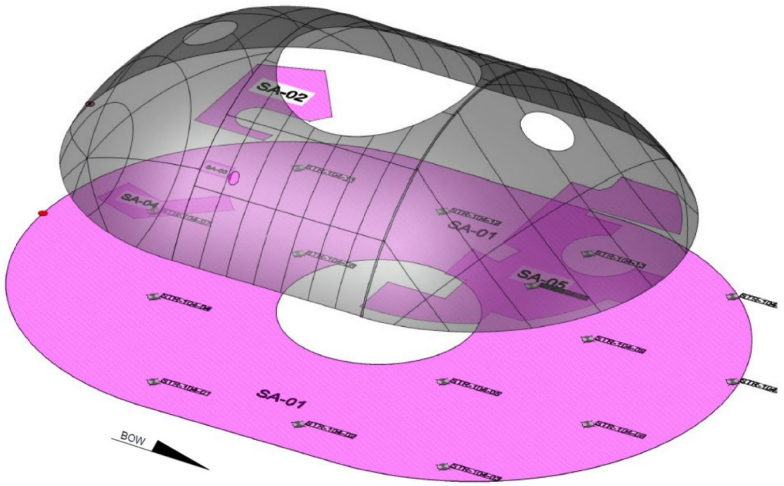
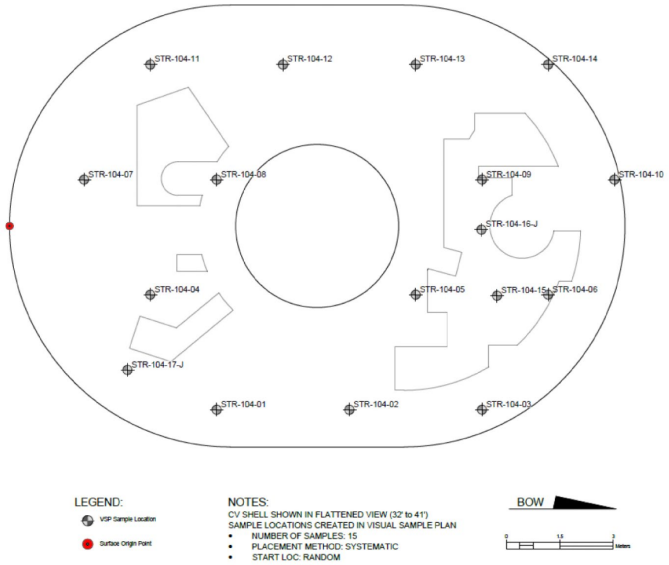
Survey Unit Location: STR-104, Containment Vessel (CV) – 2nd Level (C Deck)

Internal surfaces of the CV shell bulkhead and deck/new fiberglass grating, Includes access to reactor head, personnel hatch and equipment hatch.





Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **1.06 mrem/yr**

Remediation: None. No investigation levels were triggered.

FSS Report 1 of 5 Summary of Survey Results

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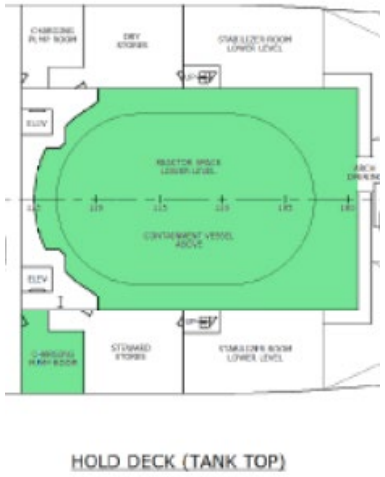
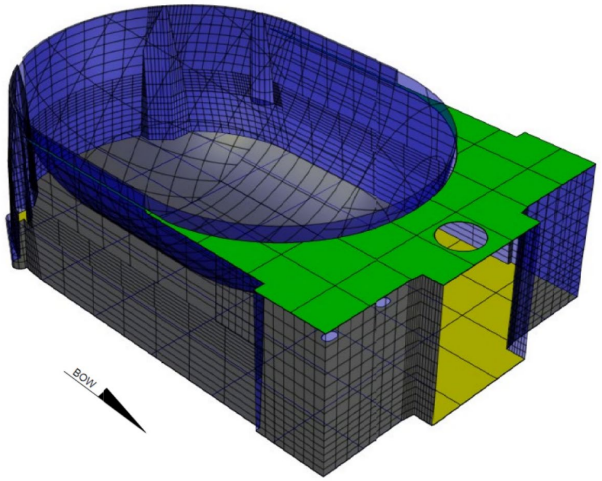
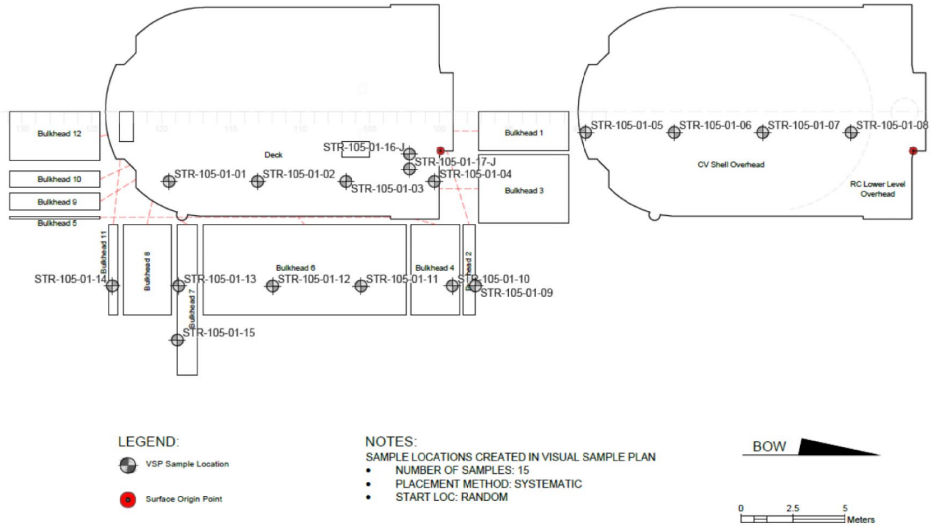
Survey Unit Location: STR-105-01, Reactor Compartment – Lower Level (5’-23’) Starboard Half

Internal surfaces of the RC that extends from the Tanktop to above A-Deck. It contained reactor plant system components.







Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **0.12 mrem/yr**

Remediation: None. No investigation levels were triggered.

FSS Report 1 of 5 Summary of Survey Results

U.S. DEPARTMENT OF TRANSPORTATION
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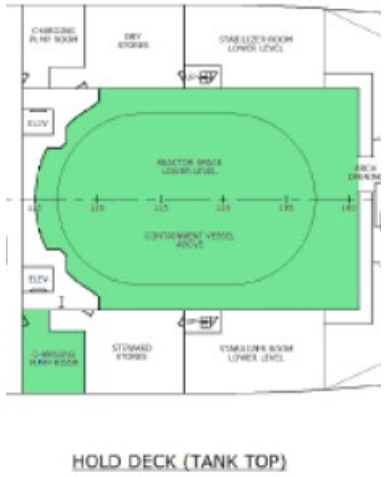
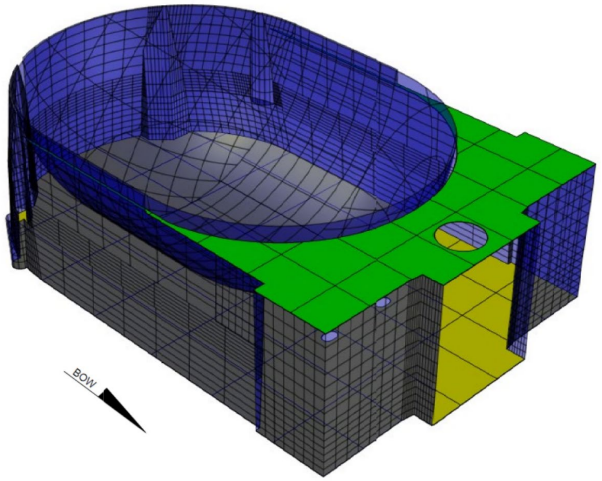
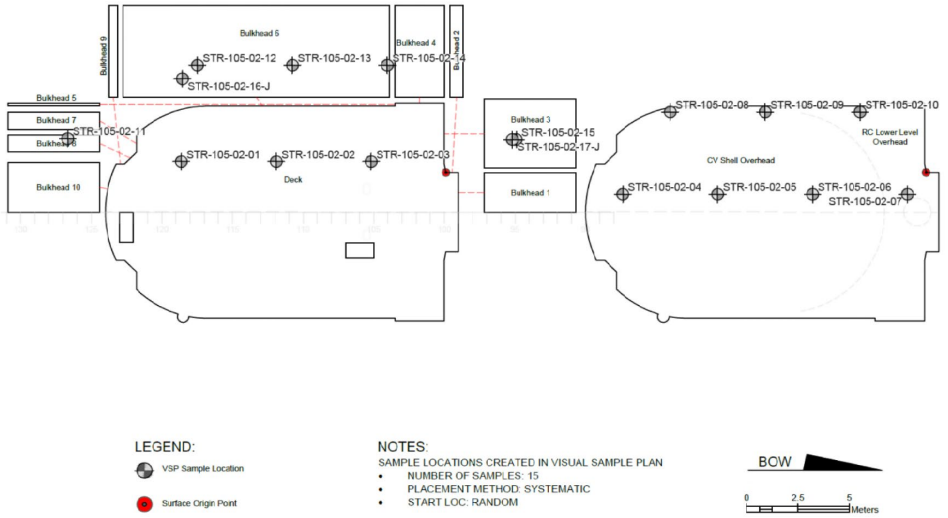
Survey Unit Location: STR-105-02, Reactor Compartment – Lower Level (5’-23’) Port Half

Internal surfaces of the RC that extends from the Tanktop to above A-Deck. It contained reactor plant system components.







Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **0.14 mrem/yr**

Remediation: None. No investigation levels were triggered.

FSS Report 1 of 5 Summary of Survey Results

U.S. DEPARTMENT OF TRANSPORTATION
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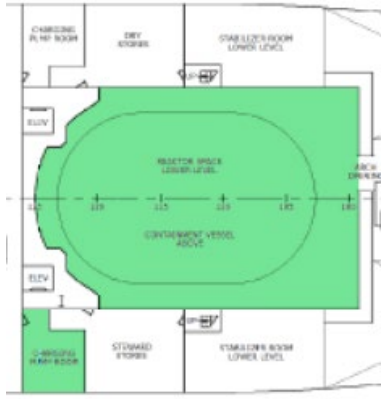
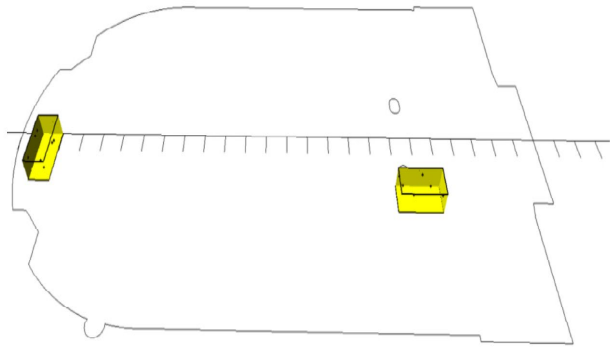
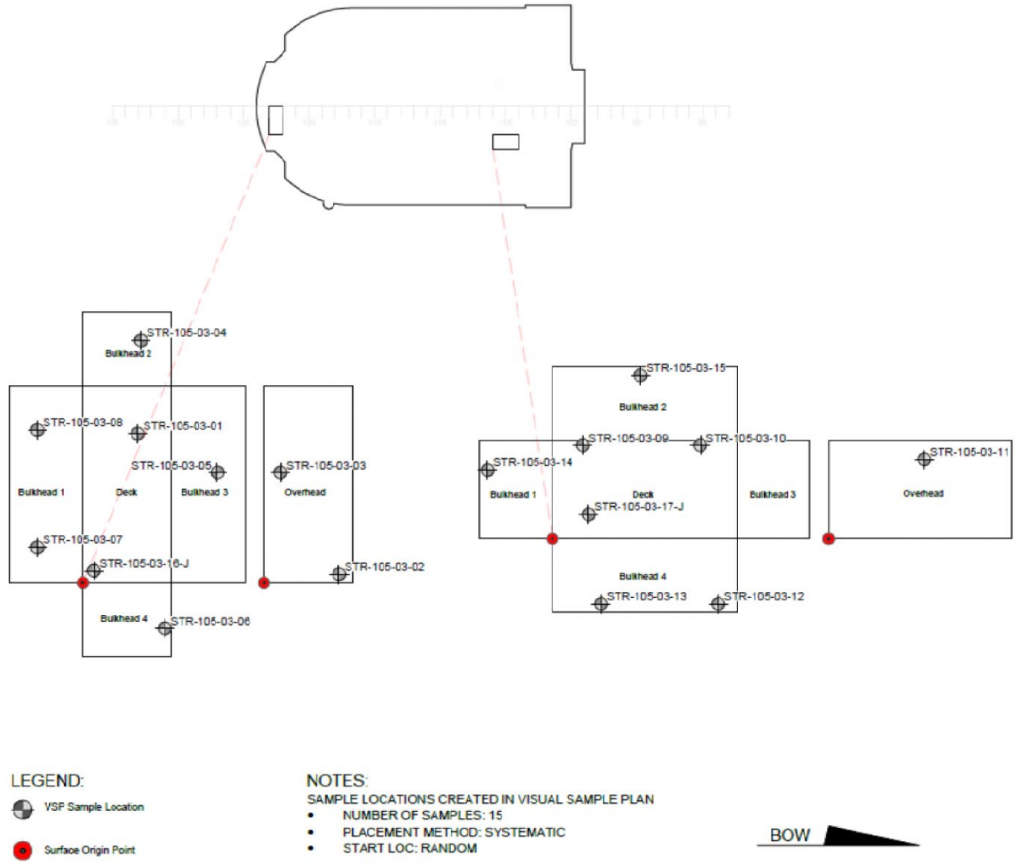
Survey Unit Location: STR-105-03, Reactor Compartment – Lower Level, Drain Wells

There are two Drain wells in the RC lower Level.



HOLD DECK (TANK TOP)





Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **0.27 mrem/yr**

Remediation: None. No investigation levels were triggered.

FSS Report 1 of 5 Summary of Survey Results

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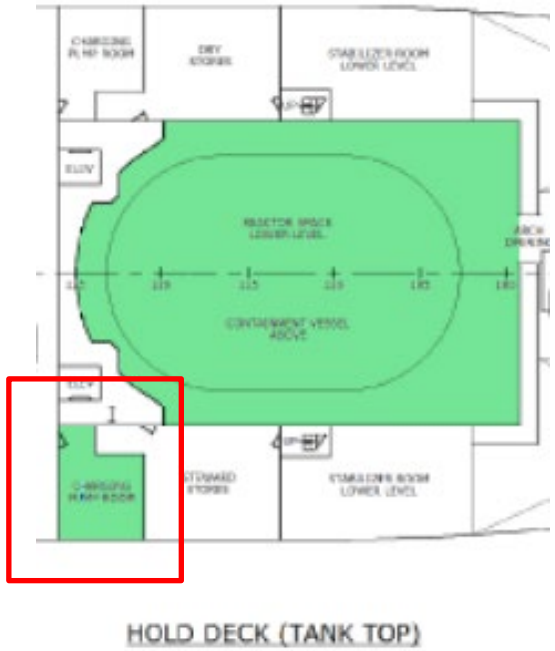
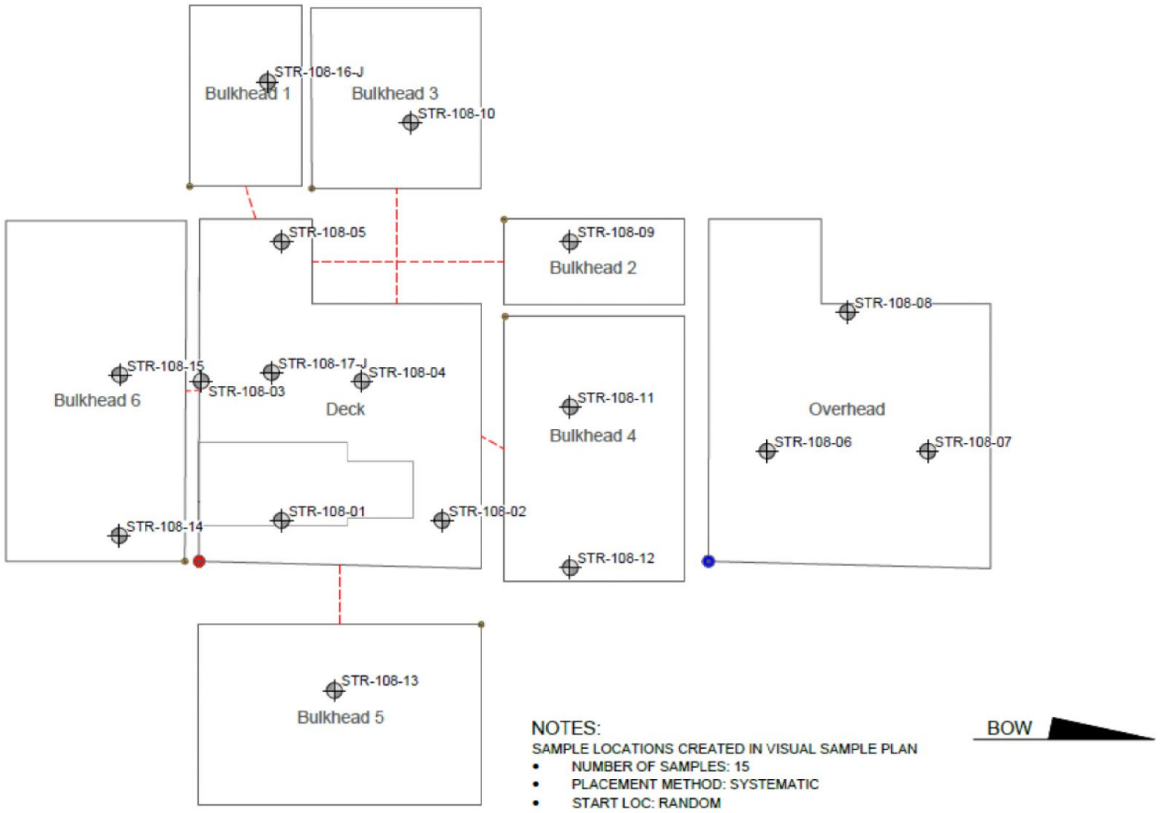
Survey Unit Location: STR-108, Starboard Charging Pump Room

See red rectangle. The system supplied makeup water to the primary system and high-pressure water to seal control drives openings in the reactor vessel head.





Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **0.15 mrem/yr**

Remediation: None. No investigation levels were triggered.

FSS Report 1 of 5 Summary of Survey Results

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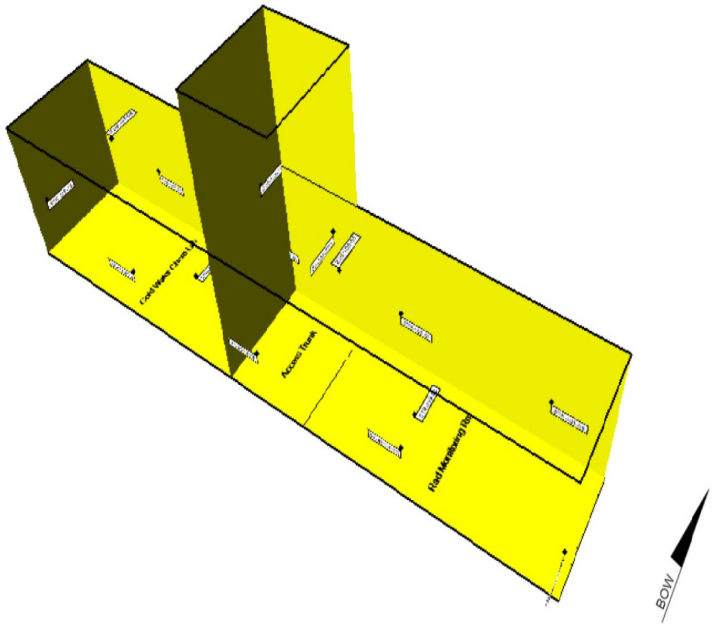
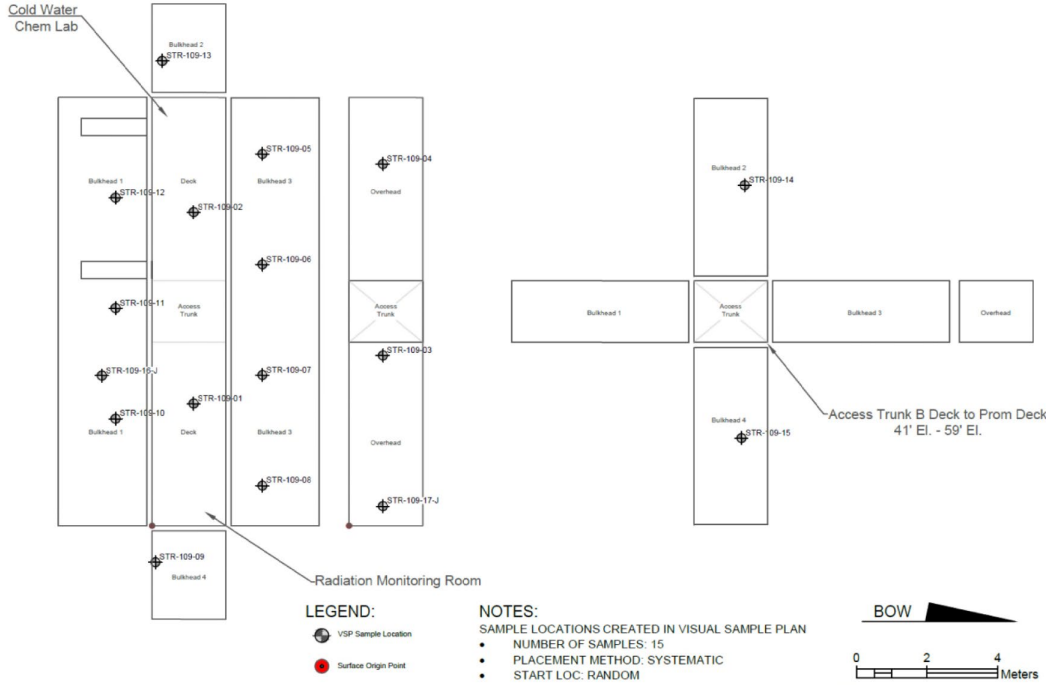
Survey Unit Location: STR-109, Auxiliary Access Trunk, C-Deck, Cold Water Chemistry Lab (Port) and Radiation Monitoring Room (Stbd) Decks A to C

This area monitored water chemistry and air exhausted from the CV and RC. It included an equipment hatch to move material in and out of the RC lower level.





Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **0.10 mrem/yr**

Remediation: None. No investigation levels were triggered.

FSS Report 1 of 5 Summary of Survey Results

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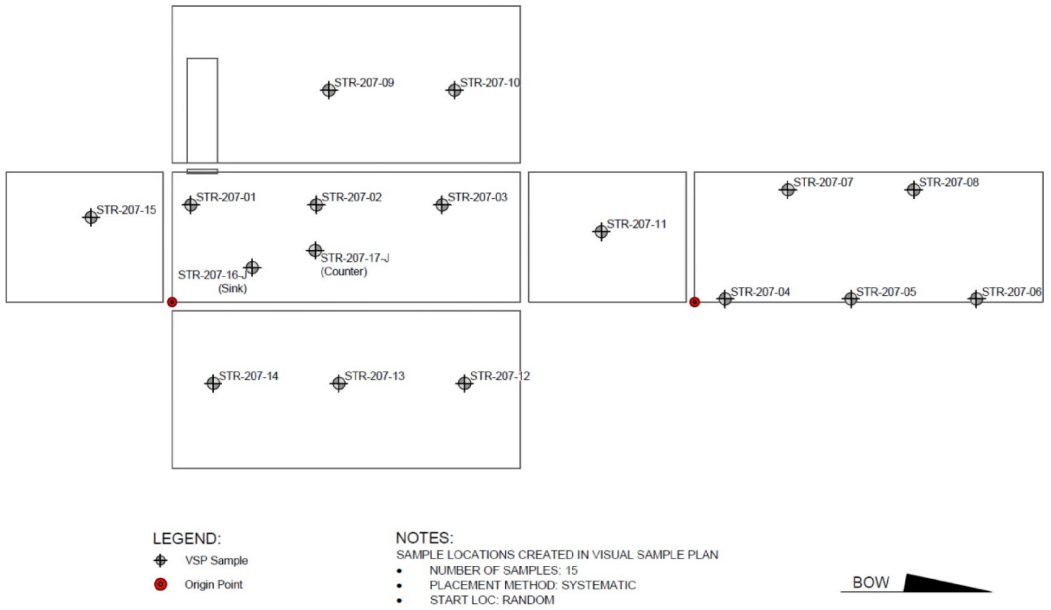
Survey Unit Location: STR-207, Health Physics Lab

The HP Laboratory was utilized primarily as a count room and for processing film badges. Records also indicate that decontamination of equipment was occasionally performed in the Health Physics Lab on A Deck.



Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **0.15 mrem/yr**

Remediation: None. No investigation levels were triggered.

FSS Report 1 of 5 Summary of Survey Results

U.S. DEPARTMENT OF TRANSPORTATION
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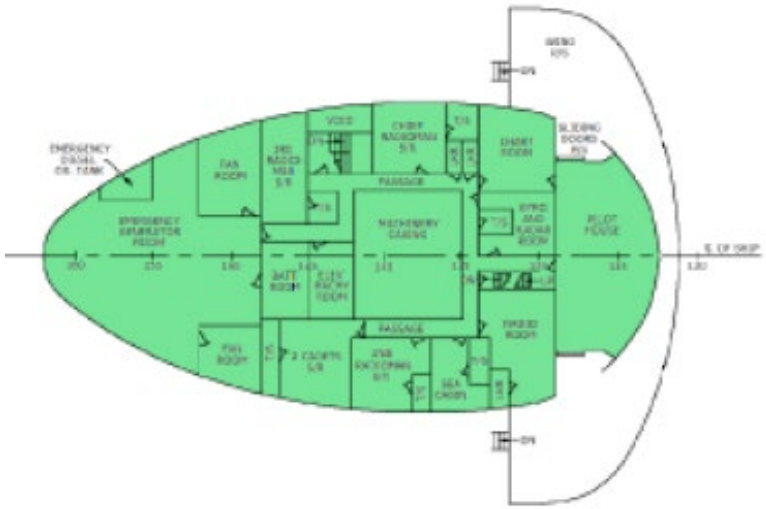
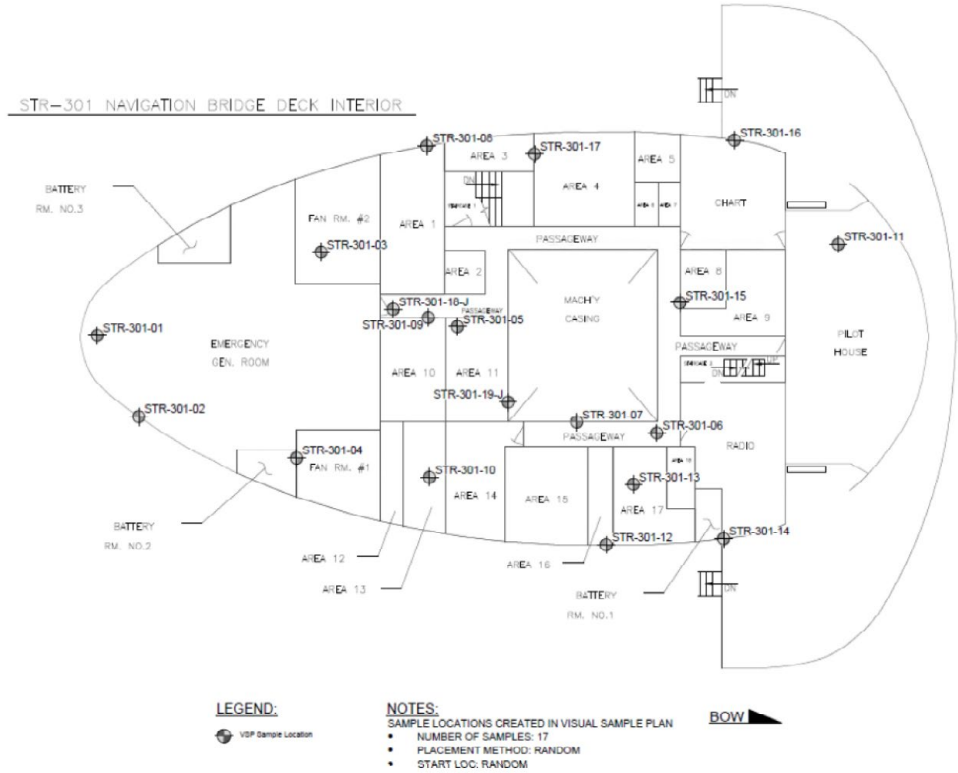
Survey Unit Location: STR-301, Navigation Bridge Deck - interior surfaces

The Navigation Bridge Deck contains the pilot house, gyro, radio and chart rooms. It also has fan rooms, battery rooms and an emergency generator room.



NAVIGATION BRIDGE DECK



Results: 16 systematic random measurement locations, 2 judgmental measurement locations, 1 QC. **0.13 mrem/yr**

Remediation: None. No investigation levels were triggered.

FSS Report 1 of 5 Summary of Survey Results

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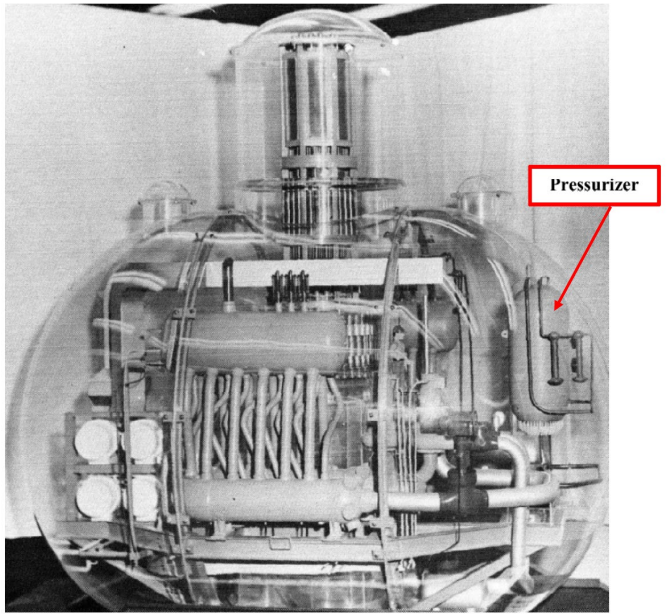
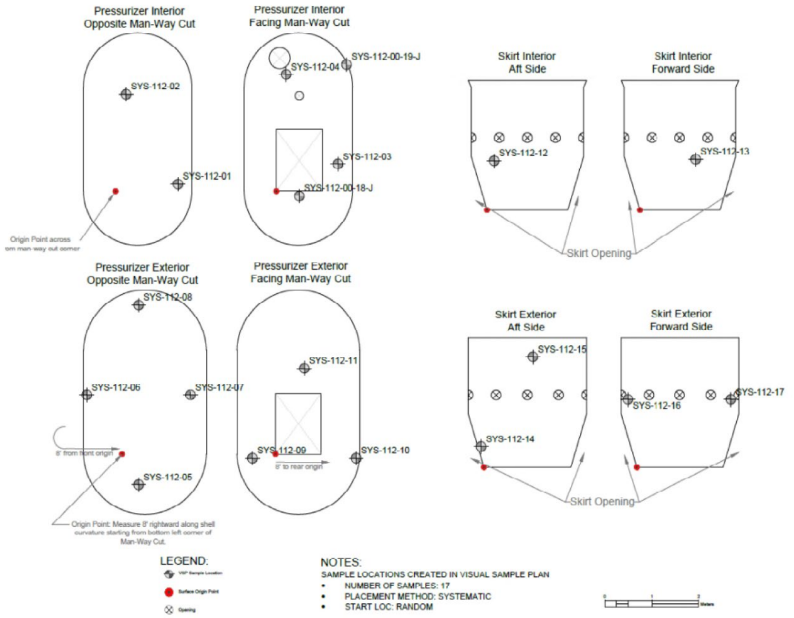
Survey Unit Location: SYS-112, Primary Pressurizer System (PE) including retained portions of the pressurizer

A manway was cut in the side of the pressurizer, all internal components were removed and a large section of the bottom that held the heaters was also removed. All that remains is the upper pressurizer shell and supporting skirt.





Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **0.42 mrem/yr**

Remediation: None. Two surveys triggered follow-up surveys. Follow-up surveys < Operational $DCGL_W$.

FSS Report 1 of 5 Summary of Survey Results

U.S. DEPARTMENT OF TRANSPORTATION
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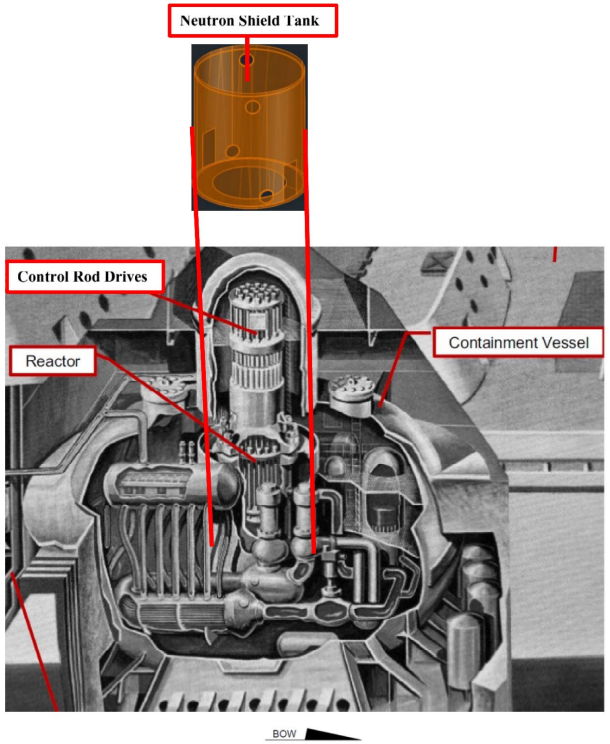
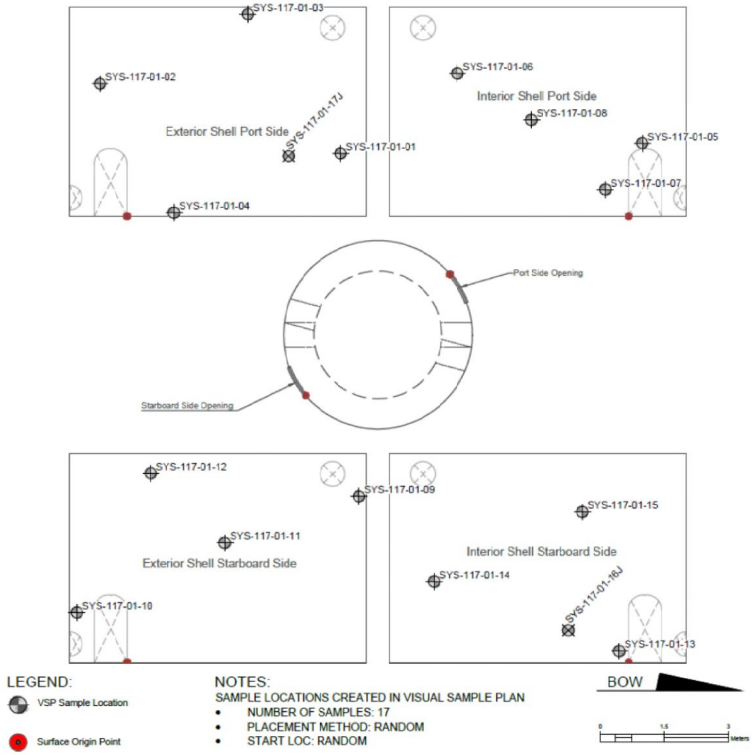
Survey Unit Location: SYS-117-01, Neutron Shield Tank wall located in the CV

The neutron shield tank was a primary shield filled with water that surrounded the reactor vessel. The survey unit consists of interior and exterior walls.





Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **0.37 mrem/yr**

Remediation: None. No investigation levels were triggered.

FSS Report 1 of 5 Summary of Survey Results

U.S. DEPARTMENT OF TRANSPORTATION
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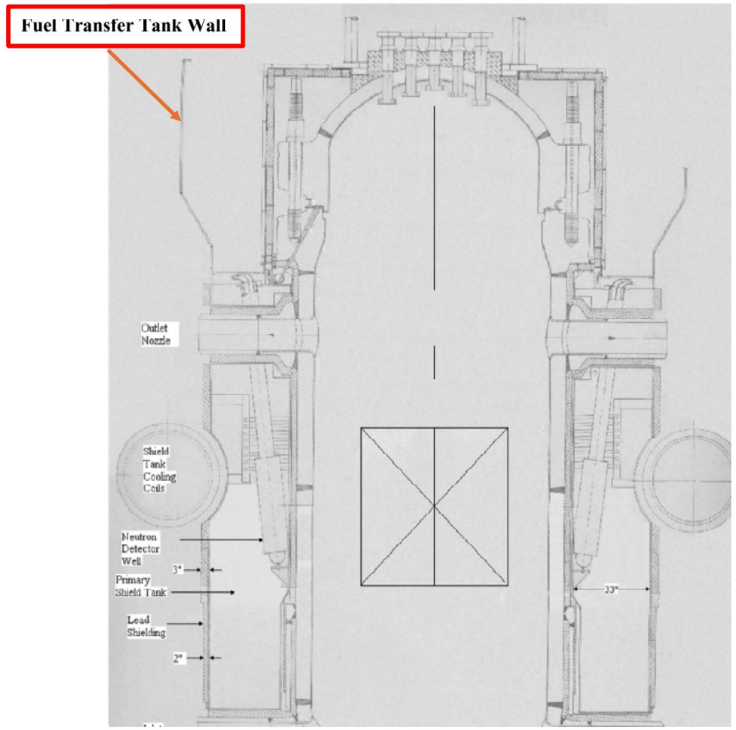
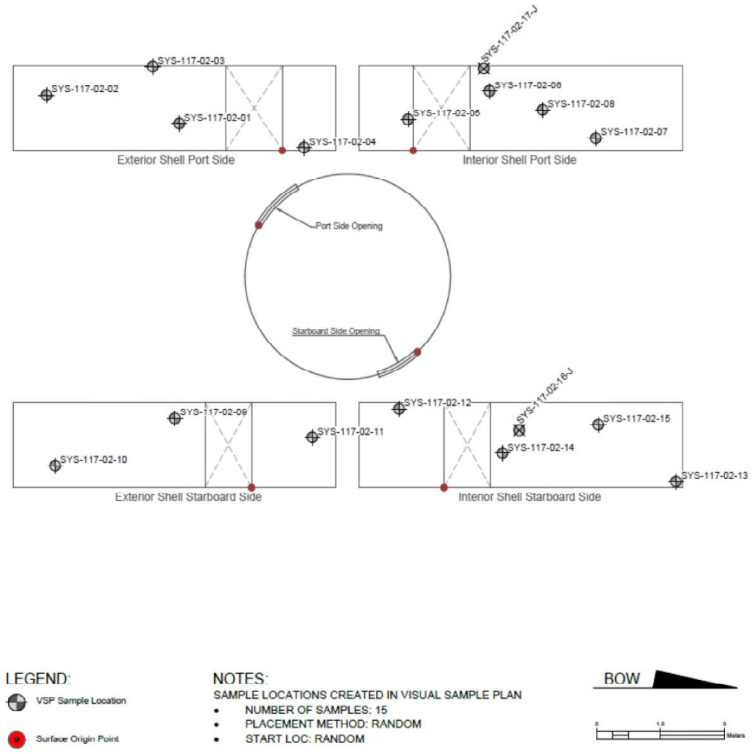
Survey Unit Location: SYS-117-02, Fuel Transfer Tank wall located in the CV

The Fuel Transfer Tank surrounds the reactor vessel head above the hot legs. It was used to reduce dose during refueling.





Results: 15 systematic static measurement locations, 2 judgmental measurement locations, 1 QC. **0.15 mrem/yr**

Remediation: None. No investigation levels were triggered.

FSS Report – Summary of Survey Results

U.S. DEPARTMENT OF TRANSPORTATION
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Derivation of the Gross Activity $DCGL_W$

- Derivation of the Gross Activity $DCGL_W$ is presented in Chapter 6 of the LTP with details presented in LTP Reference 6-9, CR-139, "Calculations to Support NS Savannah Surface Contamination DCGLs"
- CR-139 established the basis for an initial suite of potential Radionuclides of Concern (ROC) for decommissioning which included 11 radionuclides such as C-14, Co-60, Ni-63, Sr-90, etc.
- The 3 Radionuclides of Concern in the ship's mix are Co-60, Cs-137 and Ni-63.
- They comprise 99.3% of the total activity. All other radionuclides are classified as Insignificant Dose Contributors.

Radionuclide	Fraction of Total Activity	Gross Activity $DCGL_W$ (dpm/100 cm^2)
Co-60	1.63E-02	2.37E+04
Ni-63	9.00E-01	2.53E+08
Cs-137	7.61E-02	1.20E+05
Total	9.93E-01	NA

FSS Report – Summary of Survey Results

U.S. DEPARTMENT OF TRANSPORTATION
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Derivation of the Gross Activity $DCGL_W$

- Ni-63 is a hard-to-detect (HTD) radionuclide. To account for Ni-63, the Easy-To-Detect (ETD) radionuclide Co-60 is used as a surrogate.
- The surrogate DCGL is computed as shown below

$$DCGL_{surrogate} = DCGL_{ETD}\, x\, \frac{DCGL_{HTD}}{(f_{HTD:ETD} x DCGL_{ETD}) + DCGL_{HTD}}$$

$$\text{Co-60 surrogate } DCGL_W = 2.37\text{E}+04\, x\, \frac{2.53\text{E}+08}{(55.3\, x\, 2.37E+04)+2.53\text{E}+08}$$

Co-60 surrogate $DCGL_W$ = 2.36E4 dpm/100 cm^2

FSS Report – Summary of Survey Results

Derivation of the Gross Activity $DCGL_W$

- The gross activity $DCGL_W$ is computed as shown below

$$Gross\ Activity\ DCGL = \frac{1}{\frac{f_1}{DCGL_1} + \frac{f_2}{DCGL_2} + \cdots \frac{f_n}{DCGL_n}}$$

- The Co-60 and Cs-137 fractions are re-normalized after elimination of Ni-63

$$\text{Gross Activity } DCGL_W = \frac{1}{\frac{1.76\text{E}-1}{2.36E+04} + \frac{8.24E-1}{1.20E+05}} = 6.97\text{E+04 dpm/100 cm}^2$$

FSS Report – Summary of Survey Results

U.S. DEPARTMENT OF TRANSPORTATION
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Investigation Levels

- It is a quality control check to determine when a measurement process begins to deviate from expected norms.
- It may indicate a failing instrument or an improper measurement.
- Operational $DCGL_w$ is 75% of the $DCGL_w$ (based on the MARAD 15 mrem administrative limit)

Survey Unit Classification	For fixed measurements, perform investigation if:	For scan measurements, perform investigation if:
Class 1	> Operational $DCGL_W$.	> Operational $DCGL_W$
Class 2	> Operational $DCGL_W$	> Operational $DCGL_W$
Class 3	> 0.25 × Operational $DCGL_W$	>0.25 x Operational $DCGL_W$
Systems and Components	> Operational $DCGL_W$	> Operational $DCGL_W$

FSS Report 1 of 5 Final Report Summary

U.S. DEPARTMENT OF TRANSPORTATION
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Summary of Static Measurements

FSS Unit Number	# Systematic Measurements	# Random Measurements	# Judgmental Measurements	# Duplicate Measurements
STR-101-01	15	0	17	1
STR-101-02	15	0	6	1
STR-102	15	0	2	1
STR-103	15	0	2	1
STR-104	15	0	2	1
STR-105-01	15	0	2	1
STR-105-02	15	0	2	1
STR-105-03	15	0	2	1
STR-108	15	0	2	1
STR-109	15	0	2	1
SYS-112	17	0	2	1
SYS-117-01	15	0	2	1
SYS-117-02	15	0	2	1
STR-207	15	0	2	1
STR-301	0	17	2	1

FSS Report 1 of 5 Final Report Summary

U.S. DEPARTMENT OF TRANSPORTATION
MARITIME ADMINISTRATION

Summary of Random and Static Measurement Parameters

Parameter	STR-101-01	STR-101-02	STR-102	STR-103	STR-104	Units
Minimum Measurement	8.28E+02	1.08E+03	6.03E+02	5.73E+02	1.06E+03	dpm/100 cm^2
Maximum Measurement	3.77E+04	2.45E+04	2.49E+04	9.20E+03	5.07E+04	dpm/100 cm^2
Mean	9.53E+03	5.18E+03	4.07E+03	1.82E+03	4.91E+03	dpm/100 cm^2
Median	3.46E+03	2.13E+03	8.54E+02	7.74E+02	1.35E+03	dpm/100 cm^2
Standard Deviation	1.06E+04	5.96E+03	6.38E+03	2.52E+03	1.19E+04	dpm/100 cm^2
Coefficient of Variation	1.12E+00	1.15E+00	1.57E+00	1.38E+00	2.42E+00	Unitless

FSS Report 1 of 5 Final Report Summary

U.S. DEPARTMENT OF TRANSPORTATION
MARITIME ADMINISTRATION

Summary of Random and Static Measurement Parameters

Parameter	STR-105-01	STR-105-02	STR-105-03	STR-108	STR-109	Units
Minimum Measurement	2.87E+02	3.49E+02	5.09E+02	4.02E+02	3.55E+02	dpm/100 cm^2
Maximum Measurement	1.15E+03	1.47E+03	3.93E+03	1.22E+03	5.61E+02	dpm/100 cm^2
Mean	5.77E+02	6.31E+02	1.28E+03	7.00E+02	4.59E+02	dpm/100 cm^2
Median	5.41E+02	4.97E+02	7.80E+02	6.53E+02	4.41E+02	dpm/100 cm^2
Standard Deviation	1.89E+02	3.00E+02	1.08E+03	1.81E+02	6.93E+01	dpm/100 cm^2
Coefficient of Variation	3.30E-01	4.80E-01	8.50E-01	2.60E-01	1.50E-01	Unitless

FSS Report 1 of 5 Final Report Summary

U.S. DEPARTMENT OF TRANSPORTATION
MARITIME ADMINISTRATION

Summary of Random and Static Measurement Parameters

Parameter	SYS-112	SYS-117-01	SYS-117-02	STR-207	STR-301	Units
Minimum Measurement	2.52E+02	3.20E+02	8.83E+02	4.95E+02	3.72E+2	dpm/100 cm^2
Maximum Measurement	2.92E+03	6.26E+03	1.85E+04	8.74E+02	1.04E+3	dpm/100 cm^2
Mean	6.64E+02	1.72E+03	5.43E+03	6.84E+02	5.93E+2	dpm/100 cm^2
Median	3.66E+02	1.10E+03	2.14E+03	6.59E+02	5.72E+2	dpm/100 cm^2
Standard Deviation	6.91E+02	2.00E+03	5.92E+03	1.22E+02	1.28E+2	dpm/100 cm^2
Coefficient of Variation	1.04E+00	1.16E+00	1.09E+00	1.80E-01	2.20E-1	Unitless

FSS Report 1 of 5 Final Report Summary

U.S. DEPARTMENT OF TRANSPORTATION
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Residual Activity Dose Rates in Each Survey Unit

The dose contribution from residual activity in each survey unit was calculated by taking the mean activity from the static measurements and dividing by the gross activity DCGL to derive a mean fraction.

The mean fraction was then multiplied by 15 mrem/yr (NSS administrative limit) to derive the dose from residual activity in the survey unit.

Survey Unit	Dose Rate (mrem/yr)
STR-101-01	2.05
STR-101-02	1.12
STR-102	0.88
STR-103	0.39
STR-104	1.06
STR-105-01	0.12
STR-105-02	0.14
STR-105-03	0.27
STR-108	0.15
STR-109	0.10
SYS-112	0.42
SYS-117-01	0.37
SYS-117-02	1.17
STR-207	0.15
STR-301	0.13

FSS Report 1 of 5 Final Report Summary

U.S. DEPARTMENT OF TRANSPORTATION
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Conclusions

- All fifteen survey units met the DQOs of the survey plans.
- The survey units have been properly classified.
- The maximum activity concentration measured of all the random and judgmental static measurements was 5.07E+04 dpm/100 cm^2. This value is 72.7% of the gross activity $DCGL_W$.
- The sample data from all fifteen survey units passed the Sign test. The null hypothesis was rejected. Therefore, all fifteen survey units meet the release criteria.
- The maximum dose contribution from residual activity in all fifteen survey units is 2.05 mrem/yr TEDE, based on the mean activity of measurements used for non-parametric statistical sampling.
- No anomalous data was encountered as the result of the analysis of the collected data. Several elevated scan results and investigation levels were triggered resulting in investigations being performed as the result of the analysis of the collected data. Details are described in the report and in previous slides.
- Isolation and Control procedures are implemented after FSS is complete.
- All fifteen survey units are acceptable for unrestricted release.

FSS Report 1 of 5 Final Report Summary

U.S. DEPARTMENT OF TRANSPORTATION
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Report Preparation Status as of June 11, 2025

- All fifteen SURRs have completed internal, independent and Safety Review Committee reviews.
- Planned submission is July 2025.
- MARAD will submit the report and all SURRs in hard copy to the document Control Desk - as we have submitted all correspondence.
- To allow for more timely access by NRC staff, MARAD requests NRC consider allowing MARAD to upload the FSS Reports to the NRC Box.

Future FSS Report – 2 of 5

U.S. DEPARTMENT OF TRANSPORTATION
MARITIME ADMINISTRATION

STR-106	PORT Stabilizer Room
STR-107	PORT Charging Pump Room
STR-110	Gas Absorption Room
STR-111	Cupola Inner Wall
STR-202-01	RC - Mid Level - Decon Shower
STR-205	STBD Stabilizer Room
STR-206	Engine Room
STR-208	Horseshoe
STR-209	Hot Chem Lab
STR-211	RC - Mid Level - 14' Flat
STR-306	Promenade Deck - Exterior
STR-313	Refrigerator Rooms and Passageways
STR-316	Cargo Hold 4 - C Deck
STR-317	Elevators and Shafts
SYS-103	Soluble Poison Shutdown System (SP)

Estimated submission: August 2025

MARAD does not plan for a pre-submittal meeting for reports 2 – 5.

Future FSS Report – 3 of 5

STR-302	Bridge Deck - Exterior
STR-303	Boat Deck - Interior
STR-304	Boat Deck - Exterior
STR-308	A Deck - Forward - Exterior
STR-309	A Deck - Aft - Exterior
STR-311	C Deck - Interior
STR-312	D Deck - Various
STR-314	Dry Stores and Stewards Stores
STR-315	Cargo Hold 3
SYS-102	Emergency Cooling System (DK)
SYS-114-01	PD-T5 Equip Drain Tank - STBD
SYS-114-02	PD-T6 Equip Drain Tank - PORT
SYS-114-03	PD - Void Tank
SYS-114-04	PD - Fresh Water Shield Tank
SYS-118	Decommissioning HVAC

Estimated submission: September 2025

The SURRs, in which the survey unit used the ISOCS as part of the survey design or to supplement the data collection and analysis, will include a separate attachment that describes ISOCS evaluation and the geometry to support the analysis.

Future FSS Report – 4 of 5

Includes only the 2019 Exterior Hull Surveys.

Note that MARAD previously presented on this topic on January 19th, 2022, during an LTP meeting with the NRC. These slides update that presentation.

FSS Unit Number	MARSSIM Survey Unit Class	Description of Hull Area Surveyed
FSS-310A1	3	Starboard Fore
FSS-311A1	3	Starboard Mid
FSS-312A1	3	Starboard Aft
FSS-313A1	3	Port Fore
FSS-314A1	3	Port Mid
FSS-315A1	3	Port Aft
FSS-316A1	3	Starboard Above Boot Stripe
FSS-317A1	3	Port Above Boot Stripe
FSS-318A1	3	Rudder

Survey Unit Summary

Figure 1: NSS Starboard Survey Units

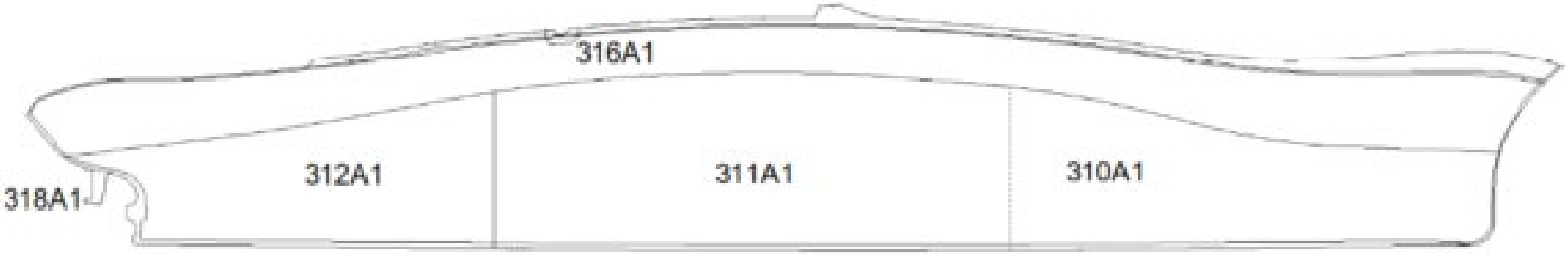
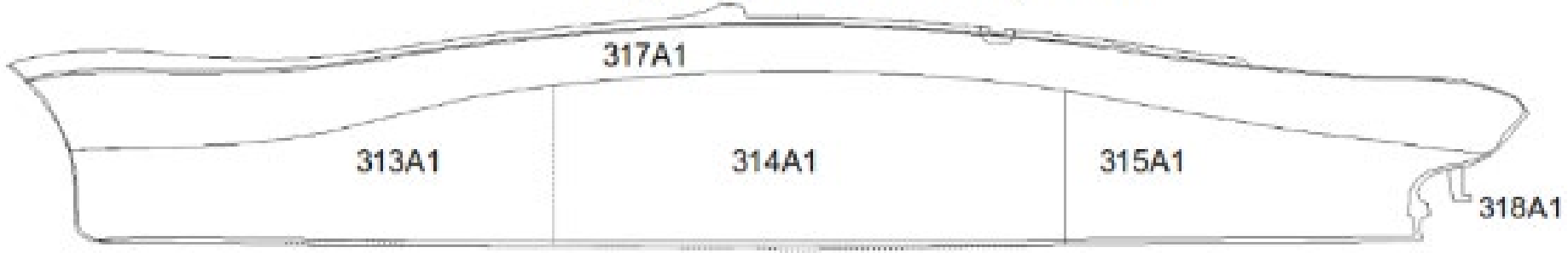


Figure 2: NSS Port Survey Units



Future FSS Report – 4 of 5

U.S. DEPARTMENT OF TRANSPORTATION
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Estimated submission: early October 2025

Notes:

1. These surveys were performed in 2019 during the last drydock availability at Philadelphia Ship Repair, LLC, (PSR) in Philadelphia, PA. This was the only time that the exterior hull was readily accessible to perform these surveys.
2. These surveys were performed following the methodology of an FSS, as described in the decommissioning activities guided by MARSSIM. They were not performed per the procedures that were later developed as part of the current decommissioning program.
3. All survey personnel followed the requirements of STS-003-001, Decommissioning Quality Assurance Program, STS-005-001, Radiation Protection Plan and STS-008-002, Health and Safety Plan.
4. Previous presentation suggested report CR-143 might be used as a release record; however, MARAD has instead prepared SURRs.

Future FSS Report – 5 of 5

STR-201	RC - Mid Level - D Deck
STR-202-00	RC - Mid Level - C Deck
STR-203	RC - Upper Level - B Deck
STR-204	RC - Upper Level - A Deck
STR-210	Cargo Hold 4 - Tank Top
STR-305	Promenade Deck - Interior
STR-307	A Deck - Interior
STR-310	B Deck - Interior
SYS_STR-119	Penetrations
SYS-106	Hydrogen Addition System (HA)
SYS-109	Intermediate Cooling System (CW)
SYS-116-01	Steam Generator - PORT
SYS-116-02	Steam Generator - STBD
STR-201	RC - Mid Level - D Deck
STR-202-00	RC - Mid Level - C Deck

Estimated submission: late October 2025

The SURRs, in which the survey unit used the ISOCS as part of the survey design or to supplement the data collection and analysis, will include a separate attachment that describes ISOCS evaluation and the geometry to support the analysis.

Questions?

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(202) 680-2066 erhard.koehler@dot.gov