



U.S. Department
of Transportation

**Maritime
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

March 25, 2002

U.S. Nuclear Regulatory Commission
ATTN: Alexander Adams,
Mail Stop O12-G13
Washington, DC 20555-0001

Subject: License NS-1, Docket No. 50-238
Nuclear Ship SAVANNAH Annual Report for CY 2001

Dear Mr. Adams:

Please find enclosed the Maritime Administration's (MARAD) annual report of activities for the Nuclear Ship (N/S) SAVANNAH (NSS) for calendar year 2001. The report consists of two documents, the minutes of the NSS Review and Audit Committee meeting held at the James River Reserve Fleet on February 13, 2002, and the NSS Annual (radiological) Survey prepared by General Health Physics, Inc. Please note that the latter includes a report of the condition of the primary and secondary systems, based on visual inspection during the annual radiological survey.

As you are aware, MARAD was cited for two violations of the NSS Technical Specifications in early 2001. As was noted in our annual report for calendar year 2000, the first violation (Primary and Secondary Systems Inspection) was permanently corrected by mid-year 2001. The correction was accomplished by promulgating inspection procedures to document the condition of the primary and secondary systems during routine radiological monitoring inspections.

The second violation (Emergency Response Team, Health Physicist on-call within two hours) is not yet corrected. Again, our 2001 annual report anticipated that MARAD would provide an emergency radiological response team from local, U.S. Navy resources. This seemed logical given the concentration of naval nuclear facilities and vessels within the greater Hampton Roads area. However, our attempts in this regard were unsuccessful. MARAD subsequently contacted the City of Newport News (Virginia) Emergency Coordinator, to determine if the City could provide response services. A meeting and site inspection was scheduled for September 12, 2001. The meeting was cancelled in the wake of the terrorist attacks of September 11. The resultant delay in rescheduling the meeting meant that no corrective action on the second violation was completed during calendar year 2001. Our efforts are continuing in calendar year 2002, and will be the subject of separate correspondence. Again, as noted last year, MARAD anticipates that our permanent corrective action will be to amend the technical specification, once an interim response capability is put in place.

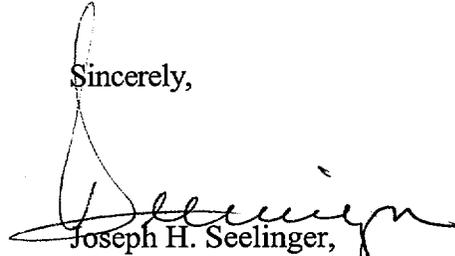
Of particular interest in recent months are developments in the possible near-term decommissioning and disposal of the NSS reactor and nuclear systems. Motivated by the impending closure of the Barnwell, South Carolina waste disposal facility, MARAD was investigating decommissioning

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N/S SAVANNAH Annual Report, CY 2001

alternatives for FY 2004 funding prior to September 11. In recent weeks these efforts have accelerated, with the possibility of FY 2002 supplemental funding for total decommissioning and disposal. While this particular effort remains very preliminary at present, it serves to indicate that MARAD is moving ahead with plans to substantively deal with the NSS reactor, something which NRC has expressed interest in over the years. I look forward to working with you and your staff as we chart this final course for the N/S SAVANNAH, and bring to a close her successful career.

Sincerely,



Joseph H. Seelinger,
Deputy Director, Office of Ship Operations

Enclosures

E. Koehler/ek/03/25/02
1EK.610.1-02.037L

cc: MAR-600, 610, 610.1, 611 (rf, rb, wc, ek), 612, 613
MRG-7100, 7600 (mfb, rr), 7700
General Health Physics (J. Davis)
U.S. Army Humphreys Engineer Center (D. Breeden)



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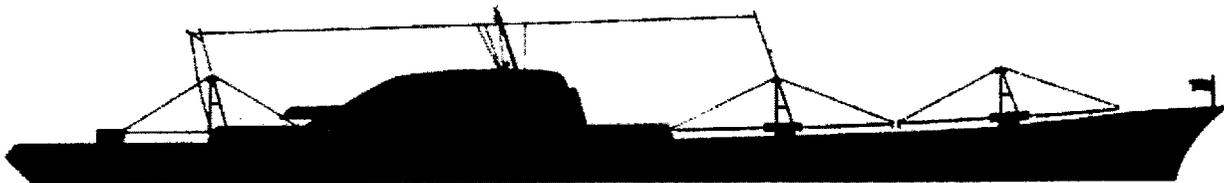
Nuclear Ship
SAVANNAH

Minutes of the Annual Meeting of the
Review and Audit Committee
Covering Calendar Year 2001

James River Reserve Fleet
Fort Eustis, Virginia

February 13, 2002

License NS-1
Docket No. 50-238



N/S SAVANNAH Review & Audit Committee

CY 2001 Annual Meeting

February 13, 2002

Minutes of the Calendar Year 2001 meeting of the Nuclear Ship (N/S) SAVANNAH Review and Audit Committee (as required by N/S SAVANNAH Facility License No. NS-1) held at the James River Reserve Fleet, Wednesday, February 13, 2002. These minutes are arranged in the order shown on the meeting agenda (attached for reference).

Members Present:

- * Joseph Seelinger, Committee Chair, MAR-610
- * Michael Bagley, JRRF Fleet Superintendent
- * John Davis, General Health Physics, Inc.
Robert Rohr, JRRF Fleet O&M Officer
Erhard Koehler, MAR-611

* denotes members required for quorum, Mr. Davis representing the U.S. Army Corps of Engineers, Humphries Engineering Center.

Guest:

Jeffrey McMahon, MARAD South Atlantic Region
Ship Operations & Maintenance Officer

Agenda Topics

I. Welcome

Mr. Seelinger convened the meeting at 11:15. A quorum was present.

Section 3.6 of the NSS Technical Specifications (TS) requires the Review and Audit Committee to meet at least annually to review and discuss events of the preceding period. The committee last met on January 17, 2001 (to discuss CY 2000), at the James River Reserve Fleet (JRRF). The minutes of that meeting were briefly reviewed without comment.

II. Discussion

A. Significant Events of CY 2001: Mr. Seelinger opened the discussion of CY 2001 significant events. The terrorist attacks of September 11 and their aftermath heavily skewed the discussion from what otherwise would have been the dominant item of the year - the two violations of the Technical Specification received in February. In the post 9-11 environment, security measures were of great importance, in

particular the continuing NRC Advisories regarding physical security of nuclear facilities. Mr. Seelinger commended the JRRF staff, particularly Ms. Cynthia K. Stockwell, for their hard work responding to the advisory comments and requests.

There has been continuing, although diminished contractor interest in decommissioning of the remaining nuclear systems. One contractor present at the ship tour last January was invited to join a MAR-610 briefing to the new Maritime Administrator - that briefing was originally planned for December 2001, but was delayed to February 6, 2002. Although not in the reporting period, it was deemed of interest to the committee to review the substance of the briefing. Various options and general points regarding decommissioning and terrorist threat mitigation were reviewed with the Administrator. Subsequent to the briefing, the Department of Transportation sought modal input for a FY 2002 supplemental appropriation for security related investments. As of this date, MARAD requested a measure of funding for SAVANNAH threat reduction.

It is understood that the Army Corps of Engineers has advanced its plans to decommission the STURGIS, and has reportedly sought funding for that purpose.

On February 15, 2001 MARAD received a notice of violation from the NRC for two apparent violations of the Technical Specification (TS). One violation has been corrected, and will be discussed further in the minutes. The other violation was an administrative violation of section 3.1 - failure to have on call within two hours a radiological health physician, and failure to have available an emergency radiological response team. MARAD was advised that interim corrective action to comply with the TS was required before final corrective action - a planned revision to the TS that would remove these requirements - could be approved by NRC. MARAD sought to obtain these services on an inter-agency basis from multiple U.S. Navy sources within the greater Hampton Roads area, on the theory that the concentration of nuclear-powered and nuclear-capable vessels in the area would require similar support. This proved impossible, however, as it was discovered that Navy policy precludes Naval, or Navy-contractors from providing radiological support outside of naval nuclear facilities. Because STURGIS has no such response requirements, the Army Corps of Engineers could not provide the services.

MARAD sought assistance from the city of Newport News, and had

scheduled a ship tour and facility inspection for September 12, 2001. The terrorist attacks of September 11 deferred any action on this matter beyond the end of the calendar year, such that corrective action on this violation remains outstanding, but in progress. The facility inspection for Newport News officials took place immediately prior to the committee meeting this date.

Mr. McMahon briefly noted that the plate anchor system developed for the JRRF following Hurricane Floyd is scheduled for installation on the SAVANNAH/STURGIS nest in the summer of 2002.

B. JRRF Activities: Mike Bagley noted the following for the record:

a. Underwater hull surveys indicate significant fouling of the hull, both hard and soft; however, the coating system is intact. The most recent survey was conducted in January 2001. (no change from CY 2000)

b. Cathodic protection system service visits have been discontinued, and a hanging anode system installed. The installed hull cathodic protection systems on STURGIS and SAVANNAH essentially performed too well after STURGIS returned from drydocking; therefore, the systems were shut down. The hanging system provides effective protection to hulls that are well-coated and maintained, such as SAVANNAH and STURGIS. The hanging system is monitored periodically, and hull potential readings are logged and evaluated monthly. Mr. Seelinger recommended periodic tests of the installed system in light of the experience at Patriots Point.¹

c. No changes in **tank soundings** have been found. (no change from CY 2000)

d. Radiation inspections, including the containment area, have been satisfactory, and seals have been changed as required. (no change from CY 2000)

e. The **remote radio alarm system** is tested monthly, and has been functioning satisfactorily. (no change from CY 2000)

f. The CY 2002 Reimbursable Agreement to fund the **radiation health physics contract** with the U.S. Army is in process.

1. At PPDA the installed hull cathodic protection system was assumed to be functional, and was not serviced or tested. The system had in fact ceased to function, and failed to protect the hull from deterioration. The installed systems will be tested at least quarterly on SAVANNAH/STURGIS.

g. FY 02 funds have been allotted to the South Atlantic Region, and purchase orders are being processed routinely.

h. **New Item - CY 2001:** The City of Newport News, VA is acquiring a fireboat, and has requested copies of fire safety plans for vessels at JRRF, including SAVANNAH.

III. Review of Technical Specification Requirements

In accordance with paragraph 3.6.3 of the TS, the Committee is specifically required to review the following items:

1. Proposed changes to Technical Specifications

For the CY 2001 reporting period, no changes to the Technical Specifications were implemented. Changes had been planned as part of the final corrective action to the violation of TS 3.1 (see below); however, the 9-11 events deferred the corrective action plan to the point that TS changes were not completed. The chairman committed to complete a thorough review and rewrite of the TS this year, and submit same to the committee for review.

2. Proposed changes or modifications to the vessel's controlled radiation area entry alarm system or containment system

No changes were implemented during CY 2001.

3. Substantive changes to radiation surveys or security surveillance procedures

a. Radiation Surveys

No changes to the radiation survey protocols were made during CY 01; however, in response to the cited violation of TS section 3.7.6, physical evaluations of the primary and secondary systems were added to the radiological surveys.

b. Security Surveillance Procedures

No routine changes were implemented during CY 01; however, physical security was increased within the entire JRRF facility following the 9-11 attacks. The additional security is primarily accomplished through additional river patrols in the anchorages, and through heightened security at the landside accesses to Fort Eustis proper.

Mr. Seelinger noted that several physical security measures are under consideration at this time which, although they do not bear on the reporting period, are worth noting for

discussion. One item is to relocate the ship to a more secure facility/location, yet to be determined. Physical enhancements to minimize the physical risk of damage to the ship and/or potential radiological release to the environment include foaming the innerbottom tanks beneath the reactor compartment, removal of selected equipment from the periphery of the reactor compartment, and partial or full decommissioning of the reactor and nuclear systems.

4. Reported violations of Technical Specifications

The NRC cited violations of TS sections 3.1 and 3.7.6 on February 15, 2001. MARAD responded by letter dated March 15, 2001. The violations and responses are discussed elsewhere in these minutes. In summary, one violation (of TS 3.7.6) has been corrected, and the other (of TS 3.1) remains in progress.

5. License Event Reports

No LER's were noted during the reporting period.

6. Annual reports to the NRC

The CY 2000 annual report was submitted to the NRC on March 15, 2000. Mr. Seelinger will submit the CY 2001 full annual report, which includes the radiological survey and the minutes of this meeting to the NRC, as soon as the radiation survey report is available.

IV. Other Topics

A. Review meeting with NN/VA re. Radiological Emergency Response

B. Security Issues

C. Funding - FY 02 Supplemental / FY 04

D. Decommissioning

E. Other

A. Review of meeting with Newport News/Virginia re. Emergency Radiological Response Team. In response to the violation of TS 3.1 (radiological response), MARAD contacted the city of Newport News to determine if the city could provide emergency radiological response. As noted previously, the initial facility inspection was scheduled for September 12. The inspection was later rescheduled for the date of the Review & Audit Committee meeting. The Newport News delegation was headed by the City's Director of Emergency Response, Mr. Jack Williamson. An attendance list is attached. Mr. Koehler briefed the delegation

N/S SAVANNAH Review & Audit Committee

CY 2001 Annual Meeting

February 13, 2002

on the nature of MARAD's requirement, the status of the NSS reactor and systems, and MARAD's plan for final corrective action (TS amendment). After a short open discussion, the delegation toured the vessel. Follow-up discussions and meetings will be scheduled as required.

B. Security Issues. Mr. Seelinger reviewed some of the actions that have been suggested to either improve the physical security of the ship, or to reduce the threat of radiological release in the event of a terrorist attack on the ship. The principal security improvement considered is to relocate the ship to a better-protected location. However, few sites are known where the risk of physical attack can be significantly reduced. The physical enhancements to reduce or mitigate radiological release are considered a more practical means to improve security. The enhancements include foaming the ship's innerbottom tanks beneath the reactor compartment, selectively removing irradiated components, piping and equipment from spaces in proximity to the ship's hull, and a combination of these two. Partial and/or total decommissioning are considered separately.

C. Funding FY 02 Supplemental / FY 04. Discussion restricted due to departmental budget sensitivity. MARAD submitted a funding request for NS SAVANNAH in the FY 02 DOT Supplemental Appropriations Request. MARAD plans to request funding for decommissioning in its FY 04 Budget Request.

D. Decommissioning. Mr. Seelinger briefly discussed recent activities MARAD has taken in pursuing decommissioning since last year's meeting. Because the subject remains somewhat sensitive from a budgetary perspective, the committee minutes cannot reflect the full extent of the discussion; however, the minutes can reflect that MARAD is considering options for partial and total decommissioning, that these options have been presented to senior agency management, and that MARAD intends to seek funding for these activities beginning in FY 04.

E. Other. It was noted for the record that staff responded to one Freedom of Information Act (FOIA) request during the reporting period, and numerous routine historical inquiries.

The meeting was adjourned at 1215.

#

AGENDA

N.S. SAVANNAH Review and Audit Committee Meeting

**James River Reserve Fleet
Fort Eustis, Virginia**

February 13, 2002

13:00 Convene meeting.

I. Welcome by Committee Chairman

II. Discussion

A. Significant Events of CY 2001

B. JRRF Activities

III. Review of Technical Specification Requirements

1. Proposed changes to the TS

2. Proposed changes or modifications to the vessel's controlled radiation area entry alarm system or containment system

3. Substantive changes to radiation surveys or security surveillance procedures

4. Reported violations of TS

5. License Event Reports

6. Annual Reports to the NRC

IV. Other Topics

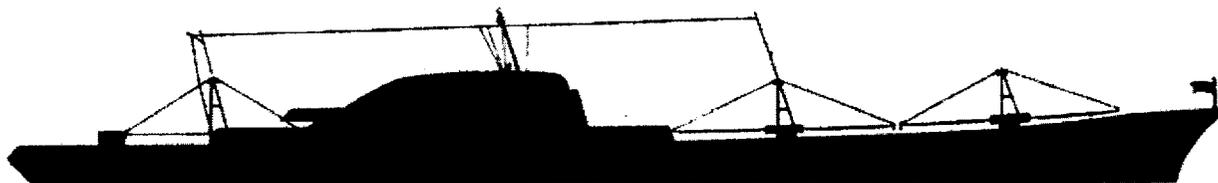
A. Review meeting with NN/VA re. Radiological Emergency Response

B. Security Issues

C. Funding – FY 02 Supplemental / FY 04

D. Decommissioning

E. Other



GENERAL HEALTH PHYSICS, INC.
7217 LOCKPORT PL #203
LORTON VA 22079
703 550-7525, 1-800 247-6572
FAX: 703 550-7525

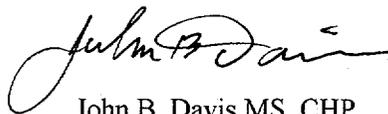
March 4, 2002

Mr Joseph Seelinger
Division of Ship Maintenance & Repair
Office of Ship Operations(MAR 611, Rm 2119)
US Maritime Administration
Washington DC 20590

Dear Mr Seelinger:

Attached id General Health Physics, Inc. report on the radiological status
of the N.S. Savannah. If you have any questions please call.

Sincerely yours,



John B. Davis MS, CHP
President

NSS Savannah Annual Survey

Location	uREM/hr	Alpha dpm/100cm ²	Beta dpm/100 cm ²
NAVIGATION BRIDGE			
Pilot House at helm	3.0	mda	mda
Bridge Wing port side	3.0	mda	mda
Fire Stat. #1 near chart rm	4.5	mda	mda
Fan rm port side gen. rm	3.5	mda	mda
E.O.G. rm	3.0	mda	mda
BOAT DECK			
Chief Eng. State rm port side	3.0	mda	mda
Cpt. State rm starboard side	2.5	mda	40
Fire Stat. #2 port side	4.0	mda	mda
Officer's lounge aft	4.0	mda	mda
Hallway floor port side	3.5	mda	mda
Forward state rm starboard side	3.5	mda	mda
Hallway floor forward center	3.0	mda	mda
PROMENADE DECK			
Top of reactor hatch	4.0	mda	mda
Starboard side of reactor hatch	4.0	mda	mda
Top of Hatch #4	3.0	17	mda
Between Hatch #3 & #4	3.5	mda	mda
Bow center of deck	3.0	mda	56
Center of Main Lounge	3.0	mda	mda
Center of Veranda	3.0	mda	mda
Fire Stat. #7 starboard side	4.0	mda	mda
Between Veranda & Swimming Pool	2.5	mda	mda
Library	3.0	mda	mda

Location	uREM/hr	Alpha dpm/100cm ²	Beta dpm/100 cm ²
Hallway in front of Main Lounge	3.5	mda	mda
Veranda port side forward	2.5	mda	mda
Bar at Veranda	3.0	mda	mda
REACTOR SPACE			
Hot pipe forward entry hatch	34	x	x
1 meter forward of lab tank	16	x	x
At lab tank	28	x	x
Pipe elbow port side forward	42	x	x
"Hot" pipe near entry hatch	x	mda	mda
Containment vessel middle of catwalk	18	mda	mda
Lab tank surface	10.0	mda	40
Open valve next to lab tank	11.0	x	x
Containment vessel middle of catwalk	8.0	x	x
Piping at the port side forward catw	8.5	x	x
Middle of catwalk port side	20	mda	mda
Piping at the port side middle of ca	21	mda	mda
Valve handle port side aft	12	x	x
Damp area on floor middle of catwalk	10	mda	mda
Containment vessel starboard side af	63	x	x
Inside entry hatch pipe	x	mda	mda
FAN ROOM			
At floor rm center	3.5	x	x
Electric motor	4.5	mda	mda
Control box	3.5	mda	mda
CABIN B1 B2			
On drums of PC's in Cabin B-1	5.0	mda	45
Average reading of Cabin B-3	4.5	x	x
On floor of Cabin B-1	x	mda	mda
Drum lid in Cabin B-1	x	mda	mda

Location	uREM/hr	Alpha dpm/100cm ²	Beta dpm/100 cm ²
STB STABILIZER RM			
At entrance door	3.5	x	x
Average background	5.0	x	x
Catwalk Lower level	x	mda	mda
Catwalk Upper level	x	mda	mda
PORT STABILIZER RM			
At access hatch	4.5	x	x
At catwalk upper level	13	x	x
At internally contaminated strainer	26	x	x
Diaphragm valve	48	x	x
Pipe to left of diaphragm valve	65	x	x
Internally contaminated valves	x	mda	mda
Control valve lower deck	x	mda	mda
Volume Chambers	x	mda	mda
Elbow diaphragm valve	x	mda	45
STB CHARGING PUMP RM			
Outside hatch	2.5	x	x
Inside hatch	10.0	mda	mda
Center of floor	x	mda	mda
Pipe back of pump motor	82	mda	mda
Pipe in back of pump	x	mda	mda
Top of pump	x	15	mda
Backside of pump	x	mda	mda
Center of floor	22	mda	mda
Outside of hatch	x	mda	mda
Air duct at pump	x	mda	mda
Pump motor	x	mda	mda
PORT CHARGING PUMP RM			
Outside door 1m from deck	9.5	x	x
Between pumps	30	x	x

Location	uREM/hr	Alpha dpm/100cm²	Beta dpm/100 cm²
Deck at hatch	x	mda	mda
Access hatch	x	mda	mda
Deck by pumps	x	mda	mda
Floor between pumps	x	mda	mda
Pump in front of rm	x	mda	mda
	x		
COLD CHEM LAB			
Background in Cold Chem Lab	10	x	x
Ventilation system/lead blanket	110	x	x
Drain (C deck)	289	x	x
Fume hood (D deck)	20	x	x
Top of storage tank	34	x	x
Air sampler (D deck)	39	x	x
Floor under air sampler (D deck)	13	x	x
Ledge of fume hood	68	x	x
Floor in front of ventilation system	12	x	x
Ventilation system	14	x	x
Ledge of fume hood (D deck)	x	mda	mda
Drain (C deck)	x	mda	48
Floor under air sampler (D deck)	x	mda	mda
Floor front of vent system (C deck)	x	mda	mda
Air Sampler (D deck)	x	mda	mda
Floor under fume hood	x	mda	mda
Shelving (C deck)	x	mda	mda
Top of storage tank	x	mda	mda
Valve near floor (D deck)	x	mda	mda
HOT CHEM LAB			
Background in hot chem lab	4.5	x	x
Waste collection tank	18	x	x
Sink	3.5	x	x
Doorway to hot chem lab	4.5	x	x
Under sink	4.5	x	x

Location	uREM/hr	Alpha dpm/100cm²	Beta dpm/100 cm²
Sink drain	12	mda	mda
Inside waste collection tank	13	mda	56
Fume hood inside	4.0	mda	mda
Floor inside door	4.5	mda	mda
Intake for hood	3.5	mda	mda
CARGO HOLD 2B			
Floor starboard side forward	3.0	mda	mda
Floor starboard side center	3.5	mda	mda
Floor starboard side aft	3.0	mda	mda
Floor aft center	4.0	mda	mda
Floor port side aft	3.5	mda	mda
Floor port side center	4.0	mda	mda
Floor port side forward	3.5	mda	mda
Floor forward center	3.0	mda	mda
CARGO HOLD 2C			
Floor port side center	3.0	mda	mda
Floor port side forward	4.0	mda	mda
Floor forward center	4.0	mda	mda
Floor starboard side forward	3.0	mda	mda
Floor starboard side center	3.0	mda	mda
Floor starboard side aft	3.0	mda	mda
Floor aft center	3.5	mda	mda
Floor port side aft	3.5	mda	mda
Floor 1c cargo hold	3.5	mda	mda
CARGO HOLD 2D			
Starboard aft	4.0	mda	mda
Starboard amidships left	3.5	mda	mda
Starboard amidships right	3.5	mda	mda
Starboard bow	4.0	mda	mda
Centerline bow	3.0	8.5	mda

Location	uREM/hr	Alpha dpm/100cm²	Beta dpm/100 cm²
Port side bow	2.5	mda	mda
Port side amidships	3.5	mda	mda
Port side aft	3.0	mda	mda
Centerline aft	3.0	mda	mda
Average	3.5	x	x
Maximum	3.0	x	x
2 TANK TOP			
Floor forward & starboard of sailboat	3.5	mda	mda
Floor sailboat center port side	3.0	mda	mda
Floor sailboat aft starboard	3.5	mda	mda
Floor sailboat center starboard	4.0	mda	mda
CARGO HOLD 3B			
At stairwell entering hold	4.5	mda	mda
Floor center forward	4.0	mda	mda
Floor starboard side forward	3.0	mda	mda
Floor starboard side center	2.5	mda	mdda
Floor starboard side aft	3.5	mda	mda
Floor center aft	3.0	mda	mda
Floor port side aft	4.5	mda	mda
Floor at display center	2.5	mda	mda
Floor port side forward	3.5	mda	mda
Average	3.5	x	x
Maximum	4.0	x	x
CARGO HOLD 3C			
Floor starboard side	3.0	mda	mda
Floor starboard center	3.0	mda	mda
At door starboard aft	3.5	mda	mda
Center aft vent	3.5	mda	mda
Floor port side aft	2.5	mda	mda
Floor port side center	3.0	mda	mda

Location	uREM/hr	Alpha dpm/100cm²	Beta dpm/100 cm²
Floor starboard forward	3.0	mda	mda
Vent center forward	4.0	mda	mda
Average	3.0	x	x
Maximum	3.5	x	x
CARGO HOLD 3D			
Floor port side forward	3.5	mda	mda
Floor port aft	3.0	mda	mda
Floor center aft	3.5	mda	mda
Floor starboard aft	3.0	mda	45
Floor starboard forward	3.5	mda	mda
Floor forward center	3.0	mda	mda
CARGO HOLD 4B			
Men's restrm	3.5	mda	mda
Floor port side center	3.0	mda	mda
Floor by door to 3B port side	4.5	mda	mda
Floor by handrail port side	3.0	mda	mda
Floor by handrail starboard side for	3.5	mda	mda
Floor by handrail starboard side cen	4.0	mda	mda
Floor by handrail starboard side aft	3.0	mda	mda
CARGO HOLD 4C			
Port side aft	3.5	x	x
Centerline aft	19	x	x
Starboard side aft	4.0	x	x
Max. reading along stern bulkhead	14	x	x
Floor at aft center (@ Max. Reading)	5.0	mda	mda
Starboard forward floor	30	mda	mda
CARGO HOLD 4D			
Floor at stern bulkhead	3.5	mda	mda
Floor starboard side	3.0	mda	mda

Location	uREM/hr	Alpha dpm/100cm²	Beta dpm/100 cm²
Under barrier rope	3.5	mda	mda
Floor starboard side forward	4.5	mda	45
Floor port side forward	3.0	mda	mda
Floor port side center	3.0	mda	mda
Floor port side aft	3.5	mda	mda
4 TANK TOP			
At ladder entering hold forward	3.0	mda	mda
Cylindrical equipment on floor forwa	3.0	mda	mda
Cylindrical equipment-center of hold	3.0	x	x
Average background	4.0	x	x
At wall port side aft	3.0	x	x
Platform center aft	3.5	x	x
Platform starboard side aft	3.5	x	x
At wall starboard side aft	3.5	x	x
Cylindrical equipment on floor forwa	4.0	mda	mda
Floor starboard side forward	2.5	mda	mda
Floor starboard side center	3.0	mda	mda
Floor starboard side aft	3.5	mda	mda
Floor starboard side aft	3.0	mda	mda
Wall center aft	3.5	mda	mda
Floor port side aft	3.5	mda	mda
Floor port side center	3.0	mda	mda
Floor port side forward	3.0	mda	mda

x= No measurement required

MDA for alpha = 8.5 dpm/100 cm²

MDA for beta = 45 dpm/100cm²

Water Sediment Activity

<i>Time Period</i>	<i>Water (pCi/l)</i>	<i>Sediment (pCi/gm)</i>
2nd Qtr Fwd	14.3	14.6
2nd Qtr Aft	11.9	12.8
4th Qtr Fwd	15.8	13.9
4th Qtr Aft	16.4	12.6

Visual Inspection of Accessible Primary and Secondary Systems

A visual inspection of accessible primary and secondary systems was conducted. There was no abnormal corrosion or moisture present on system components or hull. The photographs of the systems did not come out. Apparently the flash was not operating properly.

Tld Location2

<i>Badge Number</i>	<i>Location</i>	<i>1st Half (mR)</i>	<i>2nd Half (mR)</i>	<i>Total (mR)</i>
0 are	Control	0	33	33
1 are	Pilot House	34	37	71
2 are	Navigation Dk Chart Rm	28	31	59
3 are	Navigation Deck Cabin N	27	33	60
4 are	Navigation Dk Sea Cabin	28	31	59
5 are	Navigation DKr Officer Lo	28	31	59
6 are	Promenade Dk Main Lou	29	32	61
7 are	Promenade Dk Fire Sta.	27	30	57
8 are	Promenade Dk Purser St	29	30	59
9 are	Stb Ventilation Rm At Po	27	30	57
10 are	"A" Deck Fire Sta. 15	28	26	54
11 are	"A" Deck Fire Sta 14	29	28	57
12 are	"B" Deck Fire Sta. 20	25	0	25
13 are	"B: Deck Fire Sta. 20A	26	24	50
14 are	"B" Ent. To Reactor Com	27	28	55
15 are	Fan Room Door	28	29	57
16 are	Cabin C-9	0	35	35
17 are	"C" Deck Fire Sta. 31	40	40	80
18 are	"C" Deck Fire Sta. 34	27	26	53
19 are	Cold Chemistry Room Do	24	32	56
20 are	Between D&C Dk Fr 96 P	28	36	64
21 are	Stb Stabilizer Room Door	25	30	55
22 are	"D" Deck Fr 118 Stb	41	49	90
23 are	"D" Deck Fr 118 Port	27	28	55
24 are	Port Stabilizer Room Doo	27	34	61
25 are	"B" Deck Hold 4 Aft Port	26	33	59
26 are	"C" Deck Hold 4 Aft Stb	29	36	65
27 are	"C" Deck Fire Sta 28	30	27	57

<i>Badge Number</i>	<i>Location</i>	<i>1st Half (mR)</i>	<i>2nd Half (mR)</i>	<i>Total (mR)</i>
28 are	Sturgis Stb Side	51	31	82
29 are	Turbine Viewing Sta Stb	26	0	26
30 are	Turbine Viewing Sta Port	26	30	56
31 are	Control Rm Fwd	25	28	53
32 are	Stb Charging Pump Roo	25	26	51
33 are	Port Charging Pump Roo	27	32	59