U.S. Department
of Transportation

**Maritime
Administration**

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

February 28, 2006

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

Subject: License NS-1, Docket No. 50-238; N.S. SAVANNAH Annual Report for CY 2005

Dear Mr. Adams:

This letter constitutes the Maritime Administration's (MARAD) annual report of activities for the Nuclear Ship SAVANNAH (NSS) for Calendar Year 2005. The SAVANNAH remains securely moored at MARAD's James River Reserve Fleet, near Newport News, Virginia. The physical facility status is substantially unchanged from CY 2004.

A number of significant activities were completed and undertaken onboard the NSS during CY 2005. Most notably, MARAD completed its corrective action in response to violation number 2001-201-01, and submitted a letter reply on that subject on March 18, 2005. An internal reorganization resulted in reestablishment of the SAVANNAH Technical Staff in May 2005 as the organizational unit responsible for all NSS program activities. Radiological and environmental characterization scoping surveys were performed in March-April 2005 to support pre-decommissioning planning; unexpected results therefrom required additional surveys and destructive sampling activities that were conducted through August 2005. Results of these activities were presented to the NRC in a public meeting in Rockville on November 2, 2005.

As has become routine practice, the details of these activities are found in the two enclosed documents; a) the minutes of the NSS Review and Audit Committee annual meeting held at the James River Reserve Fleet on December 15, 2005, and b) the NSS Annual (Radiological) Survey prepared by General Health Physics, Inc. Additional activities not included in the committee minutes, as well as several regulatory reports are incorporated within the remainder of this letter.

Decommissioning Funding Statement {ref: 10 CFR 50.75(f)(1) and 50.75(e)(1)(i)(v)}:

The N.S. SAVANNAH (NSS) and its nuclear reactor are federally owned facilities, represented by the United States Department of Transportation, acting by and through the Maritime Administration. As such, funding for the decommissioning and disposal of the NSS reactor and nuclear systems components and waste must be provided by appropriations from the United States Congress. MARAD maintains no funding reserve, nor does it accumulate or collect funds as described in the CFR reference. As has been previously noted in correspondence and dialogue, the Congress

A020

appropriated funds to commence decommissioning of the NSS beginning in FY 2005. Appropriated funds in FY's 2005 and 2006 total $5.0M less rescissions. The President's FY 2007 Budget Request includes an additional $10.0M to continue NSS activities. Additional funding requests are expected to be developed and included in future budgets. MARAD expects to complete a comprehensive decommissioning cost estimate in CY 2006.

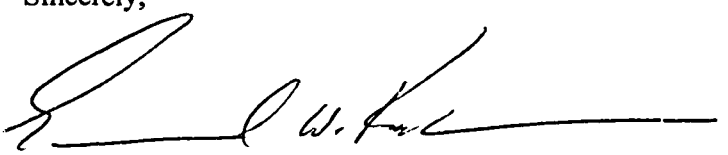
Changes, Tests and Experiments {ref: 10 CFR 50.59(d)(2)}:

In August 2005, MARAD conducted destructive sampling of the NSS Reactor Pressure Vessel wall, outer two core thermal shield barriers, and inner and outer annular walls of the Neutron Shield Tank, for the purpose of radiological classification. MARAD completed a 50.59 evaluation of the experiment, using the most recent formal FSAR and correspondence and safety evaluations contained in the several licensing actions completed subsequent to that FSAR.

Other significant activities onboard the SAVANNAH included a number of familiarization and orientation tours for senior Department of Transportation and MARAD officials and staff. Also during the calendar year MARAD hosted pre-decommissioning site inspections and Q&A sessions for potential decommissioning bidders, and engineering/planning contractors. These activities were conducted within the bounds of the Technical Specifications, yet represented a substantially increased level of activity onboard the ship as compared to any year since the ship relocated to the James River Reserve Fleet in 1994.

As always, MARAD is most appreciative of the support that NRC extends to the SAVANNAH. Please feel free to contact me at any time if you have any questions regarding MARAD's N.S. SAVANNAH activities.

Sincerely,



Erhard W. Koehler
Senior Technical Advisor, N.S. SAVANNAH

Enclosures

N.S. SAVANNAH CY 2005 Annual Report
License NS-1, Docket No. 50-238
February 28, 2006

E. Koehler\ek\02-28-2006

cc: MAR-600, 610 (rf, wc), 610.1, 610.2, 610.3, 610.4, 611 (pg, jw), 612, 613
MRG-7100, 7600 (fh), 7700
General Health Physics (J. Davis)
U.S. Army Humphreys Engineer Center (D. Breeden)

U.S. Department
of Transportation

**Maritime
Administration**

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

Nuclear Ship

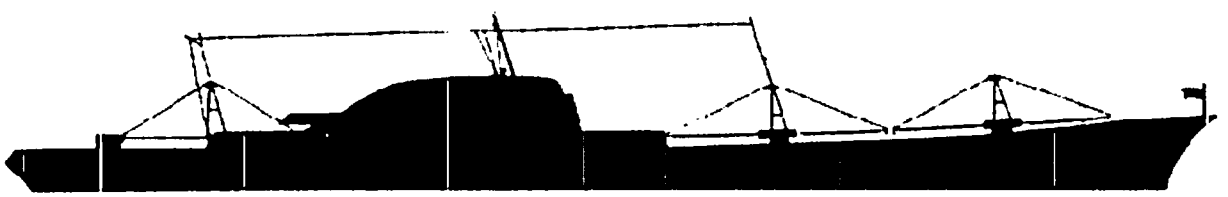
SAVANNAH

Minutes of the Annual Meeting of the
Review and Audit Committee
Covering Calendar Year 2005

James River Reserve Fleet
Fort Eustis, Virginia

December 15, 2005

License NS-1
Docket No. 50-238



Minutes of the Calendar Year 2005 annual meeting of the Nuclear Ship SAVANNAH Review and Audit Committee, held at the James River Reserve Fleet on Wednesday, December 15, 2005.

I. MEMBERS PRESENT:

Erhard Koehler*, Senior Technical Advisor /Committee Chair
John Wiegand, Decommissioning Program Manager
Greg Thornton, Facility Site Manager
John Davis*, General Health Physics, Inc. (rep USACE)
Fred Hoffmann*, James River Reserve Fleet
Michael Buonopane, Volpe Center†
Chris Zevitas, Volpe Center

Guests present and participating in the meeting included John Osborne, a subcontractor for Sayres and Associates, Inc., and Bill Halloran of the Volpe Center

II. AGENDA TOPICS

See attachment 1 for the agenda and agenda topics.

III. WELCOME

Mr. Koehler convened the meeting at 09:30 am. A quorum was present. The meeting was convened for the purpose of discussing those topics within the purview of the members present, and to support the annual reporting requirements to the NRC.

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 August 30, 2005 (to discuss Classification of the RPV), at the James River Reserve Fleet (JRRF), aboard the NS SAVANNAH. The minutes of that meeting were briefly reviewed without comment.

IV. DISCUSSION

A. Significant Events of CY 2005:

Mr. Koehler opened the committee's discussion of significant events following an introduction of all present at the

* Denotes member required for quorum.
† U.S. Dept of Trans; Research and Innovative Technology Admin; Volpe National Transportation Systems Center

meeting. Mr. Koehler then identified the following significant events:

1. **Decommissioning Planning Activities**

In late 2004, MARAD accepted an unsolicited proposal submitted by WPI* to conduct a radiological and environmental characterization scoping survey of the ship. The physical work was performed onboard the ship in March and April 2005. The survey made two significant findings with respect to physical conditions on the ship. First, the dose rates measured in proximity of the Reactor Pressure Vessel and Neutron Thermal Shield tank were much less than predicted by calculation (updated in 2003/2004 by WPI). Second, WPI discovered Primary Cooling water in both steam generator u-tube heat exchangers.

The initial response to the discovery of the primary system water† was to conduct a more detailed survey to quantify the quantity and location of remaining water. The revised estimate indicates approximately 1,500 gals of Primary Cooling water in the lower head of the RPV, lower legs of the primary piping to the pressurizer and to/from each steam generator heat exchanger.

In response to the much lower RPV dose rates, MARAD determined to conduct physical sampling of the RPV outer wall, selected internals, and the Neutron Thermal Shield Tank, and develop actual radiological profile of the constituent materials. The sampling was accomplished in August 2005, by drilling a series of holes from the exterior circumference of the NTS tank through to the second interior thermal shield baffle. The collected sample material was removed from the ship and analyzed in accordance with Part 61 requirements. The draft results

* WPI previously held contracts with MARAD in 2002 thru 2004 to perform decommissioning planning and studies; develop emergency response plans and training programs; and oversee implementation of MARAD's SAVANNAH Emergency Radiological Assistance Team (SERAT).

† Previous reports since 1976 established the expected baseline - that all remaining primary system water was entrained in the Reactor Pressure Vessel lower head, below the lowermost primary leg nozzles. In the 30 years since, the ship has been subjected to normal movements caused by sea action, and list/trim adjustments made for towing and drydocking. Such movements are theorized to have caused the migration of water from the RPV lower head.

from this testing indicates that the RPV will be a CLASS A waste package.

The RPV sampling results and other items were presented to the NRC in a public meeting on Nov. 2nd, 2005 as well as to each of the potential waste disposal sites (Barnwell and Envirocare of Utah) and their host states of Utah and South Carolina.

Other pre-decommissioning planning activities are described in the following paragraphs.

2. Organization

In 2005, MARAD re-established the SAVANNAH Technical Staff (STS) as an organizational entity within the Office of Ship Operations. Erhard Koehler heads the STS and is supported by: John Wiegand, the Decommissioning Program Manager; and Cindy Bearor, Documentation Manager. We soon hope to welcome Greg Thornton permanently, as the Facility Site Manager. We have also asked the DOT Volpe Center to help us with some of our activities as is represented by their presence here today. We also anticipate that Argonne National Laboratory (DOE Facility) and US Merchant Marine Academy at Kings Point (Engineering Department) will also soon join us on the team.

3. License Activities

MARAD completed its correction of conditions contributing to license violation 2001-201-01 in March 2005, and submitted a letter reply to NRC on March 18, 2005. Further discussion of this item is in paragraph V.D of this report.

It is anticipated that we will dry-dock the ship during calendar year 2006 in preparation for upcoming decommissioning activities. The STS also plans to declare formally our intent to decommission in mid-year.

MARAD contracted with Sayres and Associates, Inc. to provide support in re-establishing MARAD's licensing support activities. Specifically they have been assisting with the Quality Assurance Program. They also conducted a regulatory self-assessment to determine our licensing base-line. This document will assist in setting the stage for the licensed operations preparatory

to our license amendment requesting permission to decommission the facility. Some preliminary changes will be submitted in early calendar year 2006 regarding our organization changes in preparation for decommissioning.

4. Technical Specification Revisions

Substantive revisions to the Technical Specifications are in development, and will be discussed further elsewhere.

B. JRRF Annual Activities:

Fred Hoffmann provided a brief review of JRRF activities regarding the NS SAVANNAH. These included:

- Routine scheduled maintenance onboard the ship.
- Response to alarms as they appear.
- The annual underwater hull survey was completed in March 2005.
- Hanging Anode System (fleet cathodic protection) is in working order.
    - o We will need to service the on-board system during dry-docking to ensure that it is in good working order when layberthed. Mr. Hoffmann suggested the possibility of welding more sacrificial anodes on the hull - (2) anodes forward on the bow and additional anodes on the rudder. These can be made available to use from the fleet. The JRRF will place a pallet of zinc anodes on deck prior to departure for dry-docking.

C. Radiological Surveillance and Monitoring

John Davis indicated that quarterly radiological surveys indicated no noticeable changes to measured dose rates.

V. 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:

A. Proposed changes to Technical Specifications.

A draft of proposed changes is still in development.

There has been a long-standing desire on the part of the committee membership to review and revise the TS. At this time the STS is contemplating a change in the staff organization as presented in the technical specifications in order to position the "license house" for decommissioning. This change will replace the tech spec in whole to accommodate this organization change and allow for layberthing the ship alongside a pier. This is currently being referred to as an "administrative amendment." The current planning schedule calls for a final document by the end of December 2005 *(author's note - the revised TS remains under development in February 2006)*.

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

- The reactor shield plug in way of the personnel air-lock entrance way into the containment vessel (aft manway) was removed to support the characterization survey by WPI. The plug is stowed adjacent to the manway.
- The committee discussed restoring the chain fall system to permit safe removal and replacement of the shield plug during pre-decommissioning activities. Further investigation will be made before deciding on a course of action.
- WPI restored ventilation to the Containment Vessel to carry out personnel access during characterization activities. The modified system uses the nitrogen purge piping for supply and exhaust. Supply air is provided from the ship's interior dehumidified air distribution ducting. The discharge of the ventilation cycle is through a HEPA filter located in the secondary containment. This system mimics the installed (disabled) CV ventilation system, which was determined incapable of restoration at the time. The modified system was retained after the characterization activities were completed to facilitate periodic CV entries during pre-decommissioning.

C. Substantive changes to radiation surveys or security surveillance procedures.

1. Radiation Surveys

Based on the results of the Characterization Survey completed by WPI, a recommendation was made to reduce the scope of the routine monitoring and surveillance program by removing survey locations in cargo holds number 1, 2 and 3. No decision was made at the meeting.

2. Security Surveillance Procedures

Routine security surveillance continued throughout CY 2005.

D. Reported violations of Technical Specifications

No new TS violations were cited during the reporting period.

On March 18, 2005 MARAD submitted its letter reply to violation number 2001-201-01, noting that the conditions described (failure to have a health physicist on call within two hours of the ship and failure to have an Emergency Radiological Assistance team available) as a violation of TS Section 3.1 had been corrected. The NRC response noted the correction, and anticipates a future audit to validate the correction.

E. License Event Reports

No LER's were noted during the reporting period.

F. Annual reports to the NRC

The CY 2004 annual report was submitted to the NRC by letter dated March 4, 2005.

VI. OTHER TOPICS

A. Security Issues

None were noted.

B. Funding

A dedicated appropriation to fund SAVANNAH activities was approved by Congress and signed by the President in FY 2005. The President's Budget request for FY 2006 continues to include SAVANNAH funding. At the time of the meeting, the FY 2006 Department of Transportation appropriations bills were

being reconciled in conference committee, and MARAD is operating on a Continuing Resolution.

C. Status of SERAT

- The SERAT Team conducted a training exercise and drill in January 2005. The team deployed to the ship.
- A table-top drill was conducted in March 2005. {**Note:** this originally planned as a full drill, but reduced to table top drill due to weather. The completion of this drill was the last activity required to complete the correction of violation 2001-201-01 (see previous note).
- We are due for a drill in February - March 2006 time frame.
- Jefferson Labs (DOE facility) is funded through August 2006 to provide emergency radiological health physics coverage in support of MARAD and SERAT activities.
- The committee discussed the necessity to retain a SERAT capability once the ship shifts to layberth in 2006. John Davis noted that if the layberth is Baltimore, he is within two-hours driving distance.

D. Decommissioning

No formal action on decommissioning was undertaken in CY 2005; however, substantial pre-decommissioning activities were undertaken as described herein. A decommissioning amendment request is anticipated in CY 2006.

E. License Amendment

No license amendments were prepared or submitted during CY 2005. Two license amendments are under development for proposed submittal in CY 2006. The first will revise the TS, to include substantial revisions to the described MARAD organization, and to permit the ship to be berthed at a layberth (commercial pier) outside of the JRRF. The second amendment will combine the PSDAR and Decommissioning authorization request.

F. Independent Oversight Committee

In the proposed Technical Specification revision, the Review and Audit Committee will be redefined to function as an independent oversight committee.

G. Status of RPV Waste Classification

The preliminary review of the waste classification study based on drill sampling performed, indicates that the RPV as a package meets the criteria for CLASS A. This means that the nuclear waste may be disposed of either at Barnwell, SC or in the Envirocare of Utah site.

H. Other

1. Action Items

i. Volpe to take action on identifying DOE Points of Contact for other disposal sites.

#

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

February 16, 2006

Mr Erhardt Koehler
Division of Ship Maintenance & Repair
U.S. Maritime Administration
Washington DC 20590

Dear Sir:

Attached is the 2005 report for the NS Savannah. Two water activities are irregular, because of high dissolved solids in the sample. High dissolved solids result in a small sample volume. The samples are for the 1st quarter part aft and 2nd quarter stb aft.

If you have any questions please feel free to contact me.

Sincerely yours,

John B. Davis MS, CHP
President

NSS Savanah Annual Survey

Location	uREM/hr	Alpha dpm/100cm ^{2}	Beta dpm/100 cm ^{2}
NAVIGATION BRIDGE			
Pilot House at helm	3.0	13	mda
Bridge Wing port side	3.0	mda	mda
Fire Stat. #1 near chart rm	2.0	mda	mda
Fan rm port side gen. rm	3.5	mda	mda
E.O.G. rm	4.0	mda	mda
BOAT DECK			
Chief Eng. State rm port side	3.5	mda	mda
Cpt. State rm starboard side	2.5	mda	mda
Fire Stat. #2 port side	3.0	mda	mda
Officer's lounge aft	3.5	mda	mda
Hallway floor port side	3.0	mda	mda
Forward state rm starboard side	3.0	mda	42
Hallway floor forward center	3.5	mda	mda
PROMENADE DECK			
Top of reactor hatch	4.0	mda	mda
Starboard side of reactor hatch	4.5	mda	56
Top of Hatch #4	3.5	mda	mda
Between Hatch #3 & #4	3.5	mda	mda
Bow center of deck	3.5	mda	mda
Center of Main Lounge	4.0	mda	mda
Center of Veranda	3.5	11	mda
Fire Stat. #7 starboard side	3.0	mda	mda
Between Veranda & Swimming Pool	4.0	mda	mda
Library	3.5	mda	mda

No page 9.

Location	uREM/hr	Alpha dpm/100cm ^{2}	Beta dpm/100 cm ^{2}
Hallway in front of Main Lounge	3.0	mda	mda
Veranda port side forward	4.0	mda	mda
Bar at Veranda	4.5	mda	mda
REACTOR SPACE			
Hot pipe forward entry hatch	31	x	x
1 meter forward of lab tank	15	x	x
At lab tank	33	x	x
Pipe elbow port side forward	50	x	x
"Hot" pipe near entry hatch	x	mda	mda
Containment vessel middle of catwalk	15	mda	mda
Lab tank surface	7.5	mda	48
Open valve next to lab tank	10	x	x
Containment vessel middle of catwalk	8.0	x	x
Piping at the port side forward catw	9.5	x	x
Middle of catwalk port side	27	mda	mda
Piping at the port side middle of ca	19	mda	mda
Valve handle port side aft	12	x	x
Damp area on floor middle of catwalk	13	16	mda
Containment vessel starboard side af	49	x	x
Inside entry hatch pipe	x	mda	mda
FAN ROOM			
At floor rm center	3.0	x	x
Electric motor	4.5	mda	mda
Control box	2.5	mda	mda
CABIN B1 B2			
On drums of PC's in Cabin B-1	3.5	mda	mda
Average reading of Cabin B-3	4.0	x	x
On floor of Cabin B-1	x	mda	mda
Drum lid in Cabin B-1	x	mda	52

Location	uREM/hr	Alpha dpm/100cm ^{2}	Beta dpm/100 cm ^{2}
STB STABILIZER RM			
At entrance door	3.0	x	x
Average background	4.5	x	x
Catwalk Lower level	x	mda	mda
Catwalk Upper level	x	mda	mda
PORT STABILIZER RM			
At access hatch	3.0	x	x
At catwalk upper level	8.0	x	x
At internally contaminated strainer	28	x	x
Diaphragm valve	32	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	46
Elbow diaphragm valve	x	mda	mda
STB CHARGING PUMP RM			
Outside hatch	3.5	x	x
Inside hatch	10	mda	mda
Center of floor	x	mda	mda
Pipe back of pump motor	60	mda	mda
Pipe in back of pump	x	mda	mda
Top of pump	x	mda	mda
Backside of pump	x	mda	mda
Center of floor	21	mda	39
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	5.5	x	x
Between pumps	27	x	x

Location	uREM/hr	Alpha dpm/100cm ^{2}	Beta dpm/100 cm ^{2}
Deck at hatch	x	mda	mda
Acccess 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	8	x	x
Ventilation system/lead blanket	49	x	x
Drain (C deck)	240	x	x
Fume hood (D deck)	29	x	x
Top of storage tank	30	x	x
Air sampler (D deck)	36	x	x
Floor under air sampler (D deck)	15	x	x
Ledge of fume hood	60	x	x
Floor in front of ventilation system	11	x	x
Ventilation system	17	x	x
Ledge of fume hood (D deck)	x	mda	mda
Drain (C deck)	x	mda	mda
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	58
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	5.0	x	x
Waste collection tank	11	x	x
Sink	4.0	x	x
Doorway to hot chem lab	3.5	x	x
Under sink	3.5	x	x

Location	uREM/hr	Alpha dpm/100cm ^{2}	Beta dpm/100 cm ^{2}
Sink drain	8.0	mda	mda
Inside waste collection tank	6.0	mda	mda
Fume hood inside	3.5	mda	mda
Floor inside door	4.0	mda	mda
Intake for hood	2.5	mda	mda
CARGO HOLD 2B			
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	4.0	mda	mda
Floor port side aft	2.5	mda	mda
Floor port side center	4.0	mda	mda
Floor port side forward	3.5	mda	mda
Floor forward center	3.5	mda	mda
CARGO HOLD 2C	2.5	mda	mda
Floor port side center	3.0	mda	mda
Floor port side forward	3.5	mda	mda
Floor forward center	2.5	mda	mda
Floor starboard side forward	2.5	mda	44
Floor starboard side center	3.5	mda	mda
Floor starboard side aft	3.5	mda	mda
Floor aft center	4.0	mda	mda
Floor port side aft	3.5	mda	mda
Floor 1c cargo hold	3.0	mda	mda
CARGO HOLD 2D			
Starboard aft	4.5	mda	mda
Starboard amidships left	2.5	mda	mda
Starboard amidships right	3.0	mda	mda
Starboard bow	3.0	mda	mda
Centerline bow	2.5	mda	mda

Location	uREM/hr	Alpha dpm/100cm ^{2}	Beta dpm/100 cm ^{2}
Port side bow	3.0	mda	mda
Port side amidships	3.0	mda	mda
Port side aft	3.5	mda	mda
Centerline aft	2.5	mda	mda
Average	3.5	x	x
Maximum	4.5	x	x
2 TANK TOP			
Floor forward & starboard of sailboat	2.5	mda	mda
Floor sailboat center port side	3.0	8	mda
Floor sailboat aft starboard	3.0	mda	mda
Floor sailboat center starboard	3.5	mda	mda
CARGO HOLD 3B			
At stairwell entering hold	3.5	mda	mda
Floor center forward	2.5	mda	mda
Floor starboard side forward	4.0	mda	mda
Floor starboard side center	3.0	mda	mdda
Floor starboard side aft	2.5	mda	mda
Floor center aft	2.5	mda	mda
Floor port side aft	3.5	mda	mda
Floor at display center	2.5	mda	mda
Floor port side forward	2.5	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	2.5	mda	mda
At door starboard aft	3.0	mda	mda
Center aft vent	2.0	mda	38
Floor port side aft	3.5	mda	mda
Floor port side center	3.5	mda	mda

Location	uREM/hr	Alpha dpm/100cm ^{2}	Beta dpm/100 cm ^{2}
Floor starboard forward	3.0	mda	mda
Vent center forward	3.0	mda	mda
Average	3.5	x	x
Maximum	3.0	x	x
CARGO HOLD 3D			
Floor port side forward	3.0	mda	mda
Floor port aft	3.5	mda	mda
Floor center aft	3.0	mda	mda
Floor starboard aft	2.5	mda	46
Floor starboard forward	3.5	mda	mda
Floor forward center	2.5	mda	mda
CARGO HOLD 4B			
Men's restrm	3.0	mda	mda
Floor port side center	3.5	mda	mda
Floor by door to 3B port side	2.5	mda	mda
Floor by handrail port side	3.5	mda	mda
Floor by handrail starboard side for	4.0	14	mda
Floor by handrail starboard side cen	3.5	mda	mda
Floor by handrail starboard side aft	3.0	mda	mda
CARGO HOLD 4C			
Port side aft	4.0	x	x
Centerline aft	11	x	x
Starboard side aft	3.5	x	x
Max. reading along stern bulkhead	16	x	x
Floor at aft center (@ Max. Reading)	4.5	mda	mda
Starboard forward floor	4.0	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/100cm ^{2}	Beta dpm/100 cm ^{2}
Under barrier rope	3.5	8	mda
Floor starboard side forward	2.5	mda	mda
Floor port side forward	3.0	mda	mda
Floor port side center	4.0	mda	mda
Floor port side aft	3.0	mda	mda
4 TANK TOP			
At ladder entering hold forward	3.5	mda	mda
Cylindrical equipment on floor forwa	2.5	mda	mda
Cylindrical equipment-center of hold	3.0	x	x
Average background	3.0	x	x
At wall port side aft	2.5	x	x
Platform center aft	3.0	x	x
Platform starboard side aft	3.5	x	x
At wall starboard side aft	3.0	x	x
Cylindrical equipment on floor forwa	3.5	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	3.5	mda	mda
Wall center aft	3.5	mda	mda
Floor port side aft	2.5	mda	56
Floor port side center	3.0	mda	mda
Floor port side forward	3.0	mda	mda

x= No measurement required

MDA for alpha = 6.5 dpm/100 cm2

MDA for beta = 35.0 dpm/100cm2

Tld Exposure(2005)

Badge Number	*1st Half (mR)*	*2nd Half (mR)*	*Total (mR)*
0 are	29	29	58
1 are	38	32	70
2 are	23	25	48
3 are	23	26	49
4 are	25	27	52
5 are	23	29	51
6 are	23	25	48
7 are	22	24	46
8 are	26	27	53
9 are	23	25	48
10 are	23	24	47
11 are	24	25	49
12 are	20	22	42
13 are	21	19	38
14 are	21	24	45
15 are	22	24	46
16 are	21	24	45
17 are	37	33	70
18 are	28	26	54
19 are	21	23	44
20 are	25	25	50
21 are	20	19	39
22 are	32	34	66
23 are	21	23	44
24 are	21	22	43
25 are	19	22	41
26 are	22	25	47
27 are	18	24	48

Badge Number	*1st Half (mR)*	*2nd Half (mR)*	*Total (mR)*
28 are	21	21	42
29 are	20	23	43
30 are	23	22	45
31 are	18	20	38
32 are	19	18	37
33 are	18	20	38

Water Activity 2005

Field1	Field2	Field3	Field4	Field5	Field6
Quarter	Location	Alpha(pCi/l)	Alpha LLD	Beta(pCi/l)	Beta LLD
1st	Port Fwd	24.66+/-19.37	73.87	164.3+/-36.46	71.17
	Port Aft	<LLD	5.7	11.54+/-3.66	7.76
2nd	Stb Fwd	<LLD	2.7	10.08+/-1.95	3.53
	Stb Aft	<LLD	73.88	<LLD	68.92
3rd	Port Fwd	<LLD	2.94	6.91+/-1.78	3.55
	Port Aft	<LLD	3.67	<LLD	5.21
4th	Stb Fwd	3.06+/-1.1	2.86	<LLD	3.63
	Stb Aft	<LLD	2.86	8.97+/-1.89	3.53

Sediment Activity 2005

Field1	Field2	Field3	Field4	Field5	Field6
Quarter	Location	Alpha(pCi/gr)	Alpha LLD	Beta(pCi/gr)	Beta LLD
1st	Port Fwd	<LLD	3.01	8.61+/-1.40	2.7
	Port Aft	<LLD	2.98	9.11+/-1.43	2.71
2nd	Stb Fwd	<LLD	3.01	6.45+/-1.29	2.70
	Stb Aft	<LLD	2.95	6.40+/-1.30	2.69
3rd	Port Fwd	<LLD	2.84	7.8+/-1.37	2.71
	Port Aft	3.70+/-1.88	3.67	10.88+/-1.34	2.70
4th	Stb Fwd	<LLD	3.01	7.29+/-1.31	2.71
	Stb Aft	<LLD	3.01	6.15+/-1.28	2.70