U.S. DEPARTMENT OF TRANSPORTATION
MARITIME ADMINISTRATION

DOCKET NO. 50-238

N. S. SAVANNAH

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 14
License No. NS-1

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by the U.S. Department of Transportation, Maritime Administration (MARAD) (the licensee) dated October 9, 2007, and supplemented on January 25, 2007, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the rules and regulations of the Commission as set forth in 10 CFR Chapter I;

   B. The facility will be maintained in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the regulations of the Commission as set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and,

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the regulations of the Commission and all applicable requirements have been satisfied.

2. Accordingly, Facility Operating License No. NS-1 is amended by making changes to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of the date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Keith I. McConnell, Deputy Director
Decommissioning & Uranium Recovery
Licensing Directorate
Division of Waste Management and
Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Attachment:
Changes to the Technical Specifications

ATTACHMENT TO LICENSE AMENDMENT NO. 14

FACILITY OPERATING LICENSE NO. NS-1

DOCKET NO. 50-238

Revise the technical specifications by removing the pages identified below and inserting the enclosed pages. All pages of the technical specifications have been revised, and thus, all pages are identified by the new amendment number indicating that text has changed.

Technical Specifications

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Attachment

N.S. SAVANNAH

Technical Specifications
Docket No. 50-238

Appendix A to

Facility License No. NS-1

U.S. Department of Transportation
Maritime Administration

Table of Contents

1.0 GENERAL

The Nuclear Ship N.S. SAVANNAH has been in a state of protective storage since 1976 when the possession-only license was issued.

2.0 RADIOACTIVE RELEASES

2.1 Radioactive Liquid Waste Release

Applicability — Applies only to radioactive liquid waste disposal. No radioactive liquids will be produced as a result of any foreseen operations aboard the ship or from the ship's operation. Incidental amounts of liquid may be generated in the unlikely event decontamination is found necessary in Radiological Controlled Areas.

Objective — To assure that liquid radioactive waste releases do not present an undue hazard to the general public or the environment.

Specification — Radioactive liquid waste releases shall be as low as reasonably achievable and shall not exceed ten-percent (10%) of limits specified in U.S. Nuclear Regulatory Commission (NRC) (10 CFR 20) or other applicable Federal regulations. Radioactive liquid waste shall be solidified in approved media and may be transferred to a properly licensed burial facility. All solidified liquid waste shall be transferred in accordance with applicable NRC (10 CFR 71) and U.S. Department of Transportation regulations, and the burial facility's license and acceptance criteria.

2.2 Radioactive Airborne Particulate Releases

Applicability — Applies only to radioactive airborne particulate releases that may occur due to maintenance requirements such as cutting and welding of contaminated components.

Objective — To assure that radioactive airborne particulate releases do not present an undue hazard to the general public or the environment.

Specification — No activities shall be conducted that would result in a release of radioactive airborne particulates in excess of 10% of limits specified in 10 CFR 20, Appendix B, or other applicable Federal regulations.

2.3 Radioactive Liquid Waste Release Surveillance

Applicability — Applies to the surveillance requirements for controlling radioactive liquid waste released to the hydrosphere.

Objective — To verify that liquid radioactive waste discharged to the hydrosphere will not exceed 10% of limits specified in 10 CFR 20 or other applicable Federal regulations.

Specification Liquid wastes resulting from radiological decontamination shall be analyzed prior to discharge. Concentrations of radioactive liquid waste shall not exceed 10% of the applicable limits of 10 CFR 20 or other applicable Federal regulations. Records of analyses and amounts of wastes discharged shall be maintained.

2.4 Solid Radioactive Waste Release

Applicability Applies only to those solid radioactive wastes generated as the result of general decontamination of Radiological Controlled Areas, ship surveillance, and entry into Radiological Controlled Areas.

Objective To assure that solid radioactive waste presents no undue hazard to the general public or environment.

Specification All solid radioactive waste shall be maintained in appropriate containers in accordance with 10 CFR 20 and other applicable Federal regulations and secured in locked storage areas. Transfers of solid radioactive waste may be made to a licensed burial facility in accordance with applicable NRC (10 CFR 71) and U.S. Department of Transportation regulations; and the burial facility's license and acceptance criteria.

3.0 ADMINISTRATIVE CONTROLS

3.1 Administrative Responsibility

3.1.1 The N.S. SAVANNAH NS-1 License is held by the Senior Technical Advisor, as the responsible official for the U.S. Maritime Administration, Washington, D.C.

3.1.2 At all times, the custody and responsibility for access control, security, environmental surveillance, radiological monitoring, reporting to the U.S. Nuclear Regulatory Commission and maintenance will be with the Senior Technical Advisor, U.S. Maritime Administration (MARAD), Washington, D.C.

3.1.3 Radiological surveys and environmental sampling will be the responsibility of MARAD and performed by an individual who meets or exceeds the qualifications of ANSI N18.1-1971, paragraphs 4.3.2 or 4.5.2. Laboratory analyses of environmental samples will be the responsibility of MARAD and reviewed in accordance with the Decommissioning Quality Assurance Plan.

3.1.4 MARAD shall have a health physicist on duty or on call to provide health physics support and direction for all entries into Radiological Controlled Areas.

3.1.5 MARAD shall have a health physicist on duty or on call within two hours to provide health physics support and direction for radiological emergencies. MARAD shall provide an Emergency Radiological Assistance Team which will provide health physics direction and

support in the event of an on-board emergency such as fire, flooding or intrusion. In the event of fire, entry may be made into the effected Radiological Controlled Areas except the reactor containment vessel, without the support and direction of a health physicist.

3.2 Records

3.2.1 In addition to the records and documents required by applicable regulations, the Senior Technical Advisor, U.S. Maritime Administration, Washington, D.C., and other assigned personnel shall maintain the following records and documents in accordance with the Decommissioning Quality Assurance Plan:

a. Health Physics Records:
   (i) Personnel Exposure;
   (ii) Ship's Radiological Surveys; and
   (iii) Environmental Surveillance and Laboratory Analyses;

b. Radioactive Liquid Waste Disposal Log;

c. Solid Radioactive Waste Disposal Log;

d. Quarterly Inspections of Physical Barriers and Intrusion Alarms;

e. Licensee Event Reports (LER);
f. Records of Safety Review Committee Meetings;

g. File of Annual Reports to the NRC; and

h. Drawings, prints, layouts and specifications for the ship.

3.3 Radiological Criteria, Access Control and Security

3.3.1 Radiological Controlled Areas

3.3.1.1 Radiological Controlled Areas are “Restricted areas” as defined in 10 CFR 20 and in the radiation protection program developed in accordance with 10 CFR 20.

3.3.1.2 All entries into Radiological Controlled Areas shall be in accordance with the licensee's radiation protection program.

3.3.2 Access Control and Security

3.3.2.1 The license holder shall control all access to the vessel through assignment of designated personnel with appropriate administrative procedures and physical security provisions.

3.3.2.2 Visitors shall be escorted by MARAD's designated personnel.

3.3.2.3 Security for the vessel shall be provided by the license holder at all times.

3.4 Reports and Notice of Ship Movement

3.4.1 The Senior Technical Advisor, U.S. Maritime Administration, Washington, D.C. shall make the following reports:

3.4.2 Annual Report

3.4.2.1 Prior to March 1 of each year, a written annual report shall be submitted to the NRC in accordance with 10 CFR 50.4. The report shall include the following:

a. The status of the facility;

b. The summary of results of the radiological surveys and monitoring station dosimeter readings;

c. The summary of results of environmental sample analysis surveys;

d. The results of quarterly intrusion alarm system checks;

e. The amount of radioactive materials removed from the N.S. SAVANNAH by releases, discharges, and shipments of radioactive waste material;

f. A description of the principal maintenance performed on the vessel;

g. Any unauthorized entry into Radiological Controlled Areas and corrective action taken to improve access control;

h. Any degradation of one of the several boundaries which contain the radioactive materials aboard the N.S. SAVANNAH; and

i. Results of occupational exposure indicated by personal dosimetry.

3.4.3 Reportable Events

3.4.3.1 In addition to those events that are reportable in accordance with the regulations of the NRC, the following additional events are reportable:

a. Any major damage to the vessel due to severe weather conditions or other causes; and

b. Major flooding or sinking of the vessel.

3.4.3.2 Within four (4) hours of discovery, the U.S. Nuclear Regulatory Commission will be notified of any reportable event, listed above, in accordance with 10 CFR 50.72.

3.4.3.3 Within 60 days of discovery, any reportable event, listed above, will be reported to the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 50.73(d).

3.4.4 Notice of Ship Movement

3.4.4.1 Following 30 days written notice to the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 50.4, the vessel can be towed, berthed, moored or dry-docked in any U.S. domestic location having a U.S. Maritime Administration approved Port Operating Plan.

3.5 Procedures and Operating Instructions

3.5.1 Activities which are designated as within the scope of the Decommissioning Quality Assurance Plan shall be prescribed by written, reviewed and approved procedures of a type appropriate to the circumstances.

3.5.2 Procedures and any subsequent revisions shall be reviewed and approved as required by the Decommissioning Quality Assurance Plan.

3.6 Safety Review Committee

3.6.1 The Safety Review Committee shall report to the Senior Technical Advisor. The Committee will consist of at least four members. Membership shall be approved of by the Senior Technical Advisor. In aggregate, the membership experience shall include an appropriate balance of both maritime and commercial nuclear (operating and/or decommissioning) expertise. The permanent members include the following:

a. Senior Technical Advisor;

b. Decommissioning Program Manager;

c. Facility Site Manager;

d. Quality Assurance Manager; and,

e. An individual who meets or exceeds the qualifications of ANSI N18.1-1971 paragraphs 4.3.2.

3.6.2 A minimum of three members shall constitute a quorum of which one shall be the Senior Technical Advisor or their designated representative and one shall be an individual that meets or exceeds the qualifications of ANSI N18.1-1971, paragraphs 4.3.2.

3.6.3 Members of the Committee shall review all of the following items:

a. Proposed changes to Technical Specifications;

b. Evaluations required by 10 CFR 50.59;

c. Proposed changes or modifications to a Radiological Controlled Area entry alarm system or reactor containment vessel system;

d. Evaluations of substantive changes to the results of radiological surveys;

e. Procedures and revisions per Technical Specification 3.5;

f. Evaluations of reported violations of Technical Specifications;

g. Evaluations of reportable events per Technical Specification 3.4.3.1;

h. Evaluations of deviations allowed by Technical Specification 3.7.1.7;

i. Audits and self assessments to verify the effectiveness of the Decommissioning Quality Assurance Plan; and,

j. Annual reports to the NRC.

3.6.4 These reviews may be accomplished and concurred with by members of the Committee without a formal meeting.

3.6.5 The Committee shall be convened by the Chairman and shall meet annually to review and discuss events of the preceding period. The Committee will meet when necessary to review evaluations of Reportable Events per Technical Specification 3.4.3.1.

3.6.6 Written minutes of all meetings shall be prepared and distributed to all Committee members.

3.7 Ship Access Control and Surveillance

Applicability Applies to routine access control and surveillance of the ship.

Objective To prevent unauthorized entry into Radiological Controlled Areas by manning or securing their entrances and to determine changes in radiation levels or integrity of the ship. An entrance is secured by bolting, welding, locking via a chain and/or hasp, or preventing access via an equivalent method.

3.7.1 Access Control

3.7.1.1 The 42 inch containment vessel entrances shall be manned or secured.

3.7.1.2 All Radiological Controlled Areas entrances will be manned or secured.

3.7.1.3 All Radiological Controlled Area entrances will be posted with appropriate caution and warning signs.

3.7.1.4 All entrances to the ship not in use will be secured at all times.

3.7.1.5 The B Deck Reactor Compartment entrance at Frame 122 will be fitted with an intrusion alarm with audible and visual signals that will alert a manned security guard post.

3.7.1.6 MARAD trained personnel will patrol the vessel at least once during a twenty-four (24) hour period.

3.7.1.7 Deviations from the above access control conditions will be in accordance with appropriate parts of Section 3 of these Technical Specifications, Administrative Controls.

3.7.2 Surveillance

3.7.2.1 Periodically and at least once a quarter, MARAD's designated personnel will inspect the Radiological Controlled Area entrances to verify they are properly secured and test the intrusion alarm in Technical Specification 3.7.1.5.

3.7.2.2 Radiological surveys of the ship will be performed at least annually and as necessary to support ship activities in accordance with 10 CFR 20.

3.7.2.3 Thermoluminescent dosimeters (TLDs) or equivalent monitoring devices shall be placed at strategic locations throughout the vessel to monitor the radiation from reactor generated materials. MARAD shall determine these locations on the vessel and shall require dosimeter readings at least semi-annually.

3.7.2.4 Semi-annually, water samples and bottom sediment will be taken adjacent to the ship and analyzed for radioactivity.

3.7.3 Vessel and System Maintenance

3.7.3.1 Two draft level stripes will be painted fore and aft (at the draft marks), one will be just above the water level and the upper stripe will be one foot above the lower. These will be observed daily to check if the draft has increased. Both stripes must always be visible. If the lower stripe is not visible, the ship shall be surveyed and the water

leakage located. The source of leakage will be determined, the ship pumped out, and repairs made as may be required, including dry-docking if determined necessary, in order to assure that the integrity of the hull is maintained.

3.7.3.2 A cathodic protection system will be provided and properly maintained to protect the underwater areas of the vessel's hull to minimize corrosion damage to the hull.

3.7.3.3 An underwater inspection of the hull will be conducted at least every four (4) years. The vessel will be dry-docked if the inspection determines that such action is necessary due to localized severe pitting, underwater plate thinning in excess of 40 percent, or other damage that would require corrective action and/or removal of the vessel to an off-site ship repair facility.

3.7.3.4 An inspection will be conducted at least annually by MARAD's designated personnel to determine any degradation of the primary, auxiliary and secondary systems.