



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 23, 2018

Mr. Erhard W. Koehler
Senior Technical Advisor, N.S. *Savannah*
U.S. Department of Transportation
Maritime Administration (MAR-640.2)
1200 New Jersey Avenue, SE W25-209/212
Washington, DC 20590-0001

SUBJECT: NUCLEAR SHIP *SAVANNAH* - ISSUANCE OF AMENDMENT 15 TO REVISE
THE LICENSE TO ALLOW DISMANTLEMENT AND DISPOSAL

Dear Mr. Koehler:

By application dated October 31, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17307A036), the United States Maritime Administration (MARAD), requested U.S. Nuclear Regulatory Commission (NRC) approval of an Amendment revising the Nuclear Ship *SAVANNAH* (NSS) Facility Operating License NS-1 to reflect the current status for decommissioning of the ship.

The proposed change removes license condition (LC) 2.C.(2), which prevents dismantling and disposing of the ship without prior approval of the Nuclear Regulatory Commission. Your letter also requests a reissue of the license to replace pen and ink changes from License Amendment 12. The NRC staff determined that the proposed changes would continue to meet the standards in Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, "Domestic Licensing of Production and Utilization Facilities."

The NRC staff has completed its review of the proposed amendment to your license. The amendment approving the proposed changes is provided in Enclosure 1. Enclosure 2 contains the NRC staff's associated safety evaluation.

A notice of issuance of amendment has been forwarded to the Office of *Federal Register* for publication.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

E. Koehler

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If you have any questions, please contact me at 301-415-3017, or via e-mail at john.hickman@nrc.gov.

Sincerely,

/RA/

John B. Hickman, Project Manager
Reactor Decommissioning Branch
Division of Decommissioning, Uranium Recovery
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket Nos. 50-238

Enclosures:

1. Amendment No. 15 to NS-1
2. Safety Evaluation

cc w/enclosures: Distribution

E. Koehler

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SUBJECT: NUCLEAR SHIP SAVANNAH - ISSUANCE OF AMENDMENT 15 TO REVISE
THE LICENSE TO ALLOW DISMANTLEMENT AND DISPOSAL,
DATED APRIL 23, 2018

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NAME	JHickman	CHolston	BWatson		BWatson	JHickman
DATE	03/23/2018	03/26/2018	04/05/2018	04/19/2018	04/23/2018	04/23/2018

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ENCLOSURE 1

AMENDMENT NO. 15 TO LICENSE NO. NS-1

UNITED STATES MARITIME ADMINISTRATION

NUCLEAR SHIP SAVANNAH

DOCKET NO. 50-238



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

UNITED STATES MARITIME ADMINISTRATION
DOCKET NO. 50-238
NUCLEAR SHIP SAVANNAH
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 15
License No. NS-1

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for a license amendment filed by the United States Maritime Administration (MARAD, the licensee), dated October 31, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and applicable portions of the Commission's regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;
 - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the applicable rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amended license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with applicable portions of the Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
 - E. The issuance of this license is in accordance with 10 CFR Part 51, of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is hereby amended as indicated in the attachment to this license amendment, and Facility Operating License No. NS-1 is hereby amended as follows.

Paragraph 2.C.(2) of Facility Operating License No. NS-1 is hereby amended to read:

Deleted per Amendment No. 15

Paragraph 2.C.(3) of Facility Operating License No. NS-1 is hereby amended to read:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 14, are hereby incorporated in the license. The licensee shall maintain the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Bruce A. Watson, CHP, Chief
Reactor Decommissioning Branch
Division of Decommissioning, Uranium Recovery
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Attachment:
Change to Facility
Operating License No. NS-1

Date of Issuance: Month Date, 2018

ATTACHMENT TO LICENSE AMENDMENT NO. 15

TO FACILITY OPERATING LICENSE NO. NS-1

DOCKET NO. 50-238

Replace the following page of the Facility Operating License No. NS-1 with the attached revised page. For clarity, the license has been revised in its entirety. Revised pages are identified by amendment number and contains marginal lines indicating the area of change.

Facility Operating License No: NS-1

Remove

1
2
3

Insert

1
2
3



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

U.S. MARITIME ADMINISTRATION

DOCKET NO. 50-238

N.S. SAVANNAH

AMENDED FACILITY LICENSE

Amendment No. 15
License No. NS-1

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for renewal of Facility License No. NS-1 by the State of South Carolina Patriots Point Development Authority, and the U.S. Maritime Administration (the licensee¹) dated August 20, 1985, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I
 - B. The facility will be maintained in conformity with the application, 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 amended license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The licensee is technically and financially qualified to engage in the activities authorized by this amended license in accordance with the rules and regulations of the Commission;
 - E. The licensee has complied with the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - F. The issuance of this amended license will not be inimical to the common defense and security or to the health and safety of the public;

¹ On June 29, 1994, the State of South Carolina Patriots Point Development Authority was deleted as a co-licensee by License Amendment 12 to License No. NS-1.

- G. The possession and storage of the byproduct material as authorized by this amended license will be in accordance with the Commission's regulations in 10 CFR Part 30, including Section 30.33;
 - H. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, Facility License No. NS-1 is hereby amended in its entirety to read as follows:
- A. This amended license applies to the facility owned by the U.S. Maritime Administration consisting of a pressurized water nuclear reactor (hereinafter "the reactor") and the associated components and equipment, which are located aboard the NS *SAVANNAH*, and are described in the application for license dated April 30, 1965, and amendments thereto.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses the U.S. Maritime Administration:
 - (1) Pursuant to Section 104b, of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," to possess, but not operate, the reactor as a utilization facility in accordance with the procedures and limitations set forth in this license; and
 - (2) Pursuant to the Act and 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," to possess, but not to separate, such byproduct material as may have been produced by operation of the facility.
 - C. This amended license shall be deemed to contain and is subject to the conditions specified in 10 CFR Chapter I, Part 20, Section 30.34 of Part 30 and Sections 50.54 and 50.59 of Part 50, and to all applicable provisions of the Act, and to the rules, regulations and orders of the Commission now or hereafter in effect and is subject to the following additional conditions:
 - (1) The licensee shall not reactivate the reactor without prior approval of the Commission;
 - (2) Deleted per Amendment 15;
 - (3) Technical Specification
The Technical Specifications contained in Appendix A, as revised through Amendment No. 14, are hereby incorporated in the license. The licensee shall possess the facility in accordance with the Technical Specifications.

D. This amended license is effective as the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Frank J. Miraglia, Director
Division of PWR Licensing-B

Enclosure:
Appendix A Technical
Specifications

Date of Issuance: July 15, 1986

ENCLOSURE 2

SAFETY EVALUATION
UNITED STATES MARITIME ADMINISTRATION
NUCLEAR SHIP SAVANNAH
DOCKET NO. 50-238



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY
THE OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
RELATED TO THE N.S. SAVANNAH
AMENDMENT TO FACILITY LICENSE TO PERMIT DISMANTLEMENT AND
DISPOSAL ACTIVITIES TO COMMENCE
DOCKET NO. 50-238
FACILITY OPERATING LICENSE NO. NS-1

1.0 INTRODUCTION

By application dated October 31, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17307A036), the United States Maritime Administration (MARAD), requested U.S. Nuclear Regulatory Commission (NRC) approval of an Amendment revising the Nuclear Ship *Savannah* (NSS) Facility Operating License NS-1 (hereafter, the license) to reflect the current status for decommissioning of the ship.

2.0 BACKGROUND

The NSS has been shutdown since 1970, and was defueled in 1971. In 1973, the U.S Atomic Energy Commission (NRC's predecessor agency) issued an amendment placing the reactor in a SAFSTOR condition. The license was changed to possession-only in 1976. Presently, the ship is scheduled to remain at the Canton Marine Terminals in Baltimore under a long-term lay berth contract. MARAD is currently developing plans to decommission the NSS, and would like to begin preliminary dismantlement activities in preparation for full scale decommissioning.

3.0 REGULATORY EVALUATION

The proposed license amendment would modify the license to remove License Condition 2.C.(2) that prohibits dismantling and disposal of the facility without prior approval of the Commission. In 1976, when the possession-only license was first issued, this condition was consistent with the regulations governing decommissioning, which required the licensee to submit a detailed decommissioning plan for Commission approval. Upon NRC approval of the decommissioning plan, the Commission issued an order permitting the licensee to decommission its facility in accordance with the approved plan.

The regulatory process changed on July 20, 1995 (60 FR 37374) to simplify and provide licensees with greater flexibility in implementing the decommissioning process. Once a licensee permanently ceases operation of the power reactor, no major decommissioning activities could be undertaken until the public and the NRC were provided information by the licensee.

Information required from the licensee in a Post-Shutdown Decommissioning Activities Report (PSDAR) consisted of the licensee's proposed decommissioning activities and schedule through license termination, an assessment of whether such proposed activities are bounded by existing analyses of environmental impacts, and a general decommissioning cost estimate for the proposed activities. Removal of License Condition 2.C.(2) from the license updates the license to make it consistent with the current language of Title 10 of the Code of Federal Regulations, Chapter 50.82 (10 CFR 50.82).

The license has also requested that the license be reissued in its entirety for clarity. The last complete reissue of license NS-1 was Amendment 11, in 1986. Amendment 12 was issued as a pen-and-ink change in 1994, in anticipation of a license renewal in 1996. Subsequently, the requirement to renew possession-only licenses was deleted and the pen and ink version has remained in effect.

4.0 TECHNICAL EVALUATION

The licensee is currently in the process of planning for decommissioning. Phase 1 of current plans envision eliminating all current radiologically controlled areas (RCAs) outside of the reactor compartment and cold chemistry laboratory. These RCAs include the hot chemistry laboratory, the port and starboard buffer seal charge pump rooms, the port and starboard stabilizer rooms, the A deck health physics laboratory and the B-1 stateroom. Additionally, the licensee is planning to remove insulation on primary coolant system and reactor plant auxiliary systems and dismantle interference reactor plant auxiliary systems.

4.1 Facility Operating License Change

The licensee has proposed deletion of License Condition (LC) 2.C.(2) to reflect that decommissioning activities are currently allowed under the regulatory provisions of 10 CFR 50.59, which was promulgated after this license condition came into effect. Currently LC 2.C.(2) prohibits the licensee from dismantling or disposing of the reactor facility without prior approval of the Commission. This is a hold-over from when the license was under an earlier regulatory framework, referred to the implementation of a decommissioning plan by order for possession only licensees. Additionally, the licensee's proposal states that it has implemented the regulatory requirements of 10 CFR 50.59 by procedure STS-004-010 since April 2009. The limitation of this LC is unnecessary given the current regulatory controls for facility decommissioning. The deletion of this LC will allow the licensee to begin active radiological decommissioning activities consistent with the current regulatory controls. Because the current NRC regulations provide sufficient control over facility decommissioning activities and this proposed change is consistent with those controls, this proposed change is acceptable.

The licensee has proposed to reissue the license in its entirety for clarity. The licensee's submittal included a proposed mark-up of the license incorporating the changes from Amendment 12 and the proposed deletion of LC 2.C. (2). NRC staff review found the markup to differ slightly from the changes in Amendment 12. Specifically, NRC staff notes the following two deviations from the Amendment 12 language:

1. LC 1.E. should read "The licensee has complied with..." in lieu of "The licensee has satisfied..."

2. The second sentence of LC 2.C. (3) should read "The licensee shall possess the facility in accordance with..." in lieu of "The licensee shall maintain the facility in accordance with..."

The staff considered these inconsistencies to be typographical errors and only the changes consistent with Amendment 12 were evaluated for this submittal. Additionally, LC 2.C. (3) was revised to be consistent with the currently used language and to include the most recent amendment number for the Technical Specifications. The reissuance of the license, incorporating the changes made in Amendment 12, and the change to LC 2.C. (3) are administrative changes and are therefore acceptable.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment includes administrative changes to the license with respect to allowing dismantling and disposal of the facility in accordance with existing regulations, and is therefore administrative. NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration (83 FR 6235; February 13, 2018), and there has been no public comment on such finding. Accordingly, the amendment meets the eligibility criteria for categorical exclusions set forth in 10 CFR 51.22(c)(9) and 10 CFR 51.22(c)(10)(ii). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

6.0 STATE CONSULTATION

On March 16, 2018, the State of Maryland was notified of the proposed change to the NSS license to permit active radiological decommissioning of the ship. Eva S. Nair, Program Manager, Radiological Health Program, Maryland Department of the Environment, responded on March 19, 2018, with no comments or questions.

7.0 CONCLUSION

The changes proposed by this license amendment will remove the License Condition that prevents dismantling and disposing of the facility without prior approval of the Commission. Instead, dismantling and disposal activities will be governed by License Condition C that states the license is subject "to the rules, regulations and orders of the Commission now or hereafter in effect ... " Specifically, dismantling and disposal will be conducted in accordance with 10 CFR 50.59 and 10 CFR 50.82. On the basis of its review, NRC staff concluded that the licensee's request will adequately address the regulatory safety requirements for the facility while allowing the licensee to proceed with dismantlement and disposal of the radiologically contaminated materials. The staff, therefore, concludes that the license amendment request is acceptable.

The staff has concluded, based on the considerations discussed above, that: 1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; and 2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security nor to the health and safety of the public.

Principal Contributor: Theodore Smith

Date: March, 2018