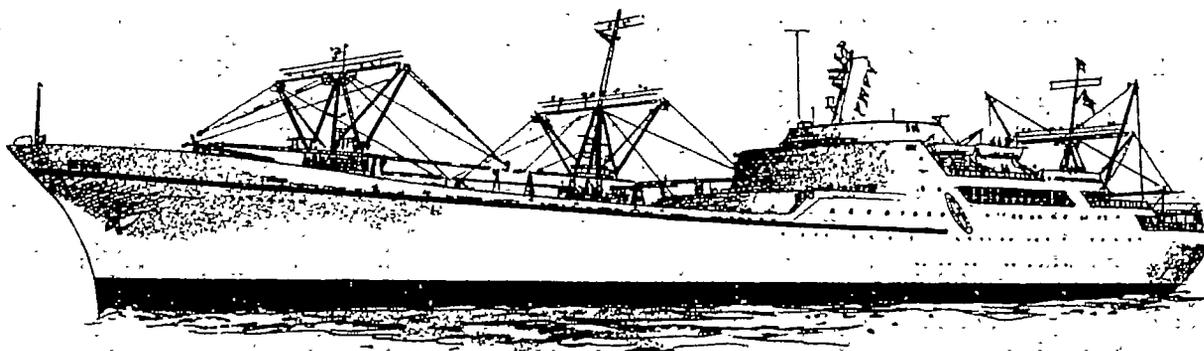




**U.S. Department of Transportation
Maritime Administration**



N.S. SAVANNAH

**DECOMMISSIONING FUNDS STATUS REPORT
FOR CY2020**

STS - 215

Revision 0

Approved:

Date: March 31, 2021

Manager, N.S. *SAVANNAH* Programs

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Record of Revisions

Revision	Summary of Revisions
0	The original version of the Decommissioning Funds Status Report for CY2020

List of Effective Pages

Page No.	Rev. No.	Page No.	Rev. No.	Page No.	Rev. No.
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1.0 INTRODUCTION

This Decommissioning Funds Status Report is submitted by the Maritime Administration (MARAD) as licensee for the Nuclear Ship SAVANNAH (NSS) and covers the calendar year 2020 (CY2020) reporting period. This report incorporates the guidance contained in Regulatory Guide (RG) 1.159, Assuring the Availability of Funds for Decommissioning Nuclear Reactors, Rev 1, Reference (a). The report is arranged in six sections following this introduction.

In accordance with the requirements of 10 CFR 50.75(f)(1), each power reactor that has already closed is required to report annually the status of its decommissioning funds to the Nuclear Regulatory Commission (NRC) on a CY basis. Section 2.0 of this Decommissioning Funds Status Report includes the seven (7) reports required by 10 CFR 50.75(f)(1).

In accordance with the requirements of 10 CFR 50.82(a)(8)(v)-(vii), each power reactor that has already submitted its site-specific Decommissioning Cost Estimate (DCE) is required to provide a financial assurance status report annually to the NRC on a CY basis. MARAD submitted a summary of its DCE with its Post Shutdown Decommissioning Activities Report (PSDAR), Rev 1, Reference (b). Section 3.0 of this Decommissioning Funds Status Report includes the reports required by 10 CFR 50.82(a)(8)(v)-(vii).

Section 4.0 of this report provides specific information regarding the funds made available to MARAD during the reporting period.

Section 5.0 of this report provides information on regulatory commitments made by MARAD that are germane to decommissioning funding.

Section 6.0 notes the time remaining to complete decommissioning.

Section 7.0 lists references.

Because the Federal fiscal year (FY) does not align with the CY, each annual decommissioning funds status report will include information from at least the two FYs that directly provide funds for expenditure during the reporting period. In most years, prior to the submission of the report on (or about) March 31, the President will submit a budget request to the Congress for the upcoming FY. Given that NSS activities are funded on an annual basis, the President's budget request is an early, although not definitive, indicator of future NSS funding. Since future funding can impact the decommissioning schedule described in the PSDAR, MARAD includes this public information, to the extent that it may be available, for context and in partial satisfaction of the 10 CFR 50.82(a)(7) requirement to notify the NRC of expected changes to content in the PSDAR. If included, this information is contained in Section 4.0 of this report.

1.1 Decommissioning Status

The NSS holds a Possession-only license that was modified by License Amendment 15 (Reference c) to allow dismantlement and disposal. As a result of License Amendment 15, the ship's status changed from "Mothballed" to "Dismantlement."

Dismantlement is defined in Regulatory Guide (RG) 1.86, *Termination of Operating Licenses for Nuclear Reactors*, Reference (d). This 1974 RG describes the now outmoded Dismantling option of decommissioning. MARAD understands RG 1.86 was withdrawn as noticed in the Federal Register (81 FR 53507) on August 12, 2016 and that its withdrawal does not impact the NSS licensing basis. MARAD uses the words 'active decommissioning' and 'dismantlement' interchangeably.

On March 4, 2020, MARAD issued a Request for Proposals (RFP) to seek decommissioning and license termination support services. Because that contract has not been awarded, certain information contained

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within this report is Source Selection Information as described in Part 2.101 of the Federal Acquisition Regulations, and has been requested for withholding from public disclosure.

1.2 Decommissioning Funding Sources

MARAD is a modal agency of the United States Department of Transportation (DOT). It is a Federal licensee as defined by the NRC. As such, funds for decommissioning and termination of the NSS license are provided by Federal appropriations. As described in the *Annual Report for Calendar Year (CY) 2018*, Reference (e), the NSS Decommissioning project is fully funded.

2.0 STATUS OF DECOMMISSIONING FUNDS ANNUAL REPORT

This section provides a discussion of the seven items required by 10 CFR 50.75(f)(1), and incorporates the guidance contained in RG1.159. The reporting requirements and corresponding MARAD information are provided below.

2.1 The amount of decommissioning funds estimated to be required.

- a) *Current licensed activities require approximately \$3.00 million annually.*
- b) *The revised site-specific Decommissioning-License Termination (DECON-LT) cost estimate is \$137.1 million¹.*

2.2 The amount accumulated to the end of the calendar year preceding the date of the report.

Accumulation of funds is not applicable to the NSS. As a Federal licensee, 10 CFR 50.75(e)(1)(iv) allows funding for decommissioning activities to be obtained by appropriations when necessary. As noted above, the project is fully funded.

2.3 A schedule of the annual amounts remaining to be collected.

Annual collection of funds is not applicable to the NSS. As a Federal licensee, 10 CFR 50.75(e)(1)(iv) allows funding for decommissioning activities to be obtained by appropriations when necessary. As noted above, the project is fully funded.

2.4 The assumptions used regarding rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections.

The 2020 revised site-specific DECON-LT cost estimate used 12.793% escalation for disposal of low level radioactive waste (LLRW). Transportation and Electric Power escalated costs for 2020 were negative values (-21.5% and -1.2% respectively). Due to the volatile nature of these factors, Transportation and Electric Power costs were conservatively set at 0.0%. All other industrial task costs were escalated at 2.3%.

Escalation factors were determined referencing NUREG 1307, Revision 18 (Waste Disposal costs) and by direct data from Bureau of Labor Statistics from <http://www.bls.gov/data/>, Series ID for the latest values available:

1. *Wpu0543 (Industrial electric power)*
2. *Wpu0573 (Light fuel oils)*
3. *CIU2010000002101 (Total compensation, private industry, South region).*

Based on the above factors, the DECON-LT cost estimate escalation rate from 2019 to 2020² is 4.53%.

There are no rates of earnings on decommissioning funds.

2.5 Any contracts upon which the licensee is relying pursuant to paragraph (e)(1)(v) of this section.

Not applicable because MARAD, as a Federal licensee, is funded per the 10 CFR 50.75(e)(1)(iv) method.

2.6 Any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report.

¹ MARAD does not presently expect to require additional budgetary resources due to formula-based escalation of the decommissioning estimate.

² The cost estimate escalation rate from 2019 to 2020 is based on conservatively readjusting the 2019 Decommissioning Fund Status Report Transportation and Electric Power cost escalation factors from negative values to zero. The readjustment increases the reported CY 2019 cost estimate by \$456,000 (less than one percent differential).

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There have been no modifications to MARAD's financial assurance methodology, which is limited to the use of Federal appropriations. Please refer to the response in Section 4.1 below for more information.

2.7 Any material changes to trust agreements.

Not applicable because MARAD, as a Federal licensee, is funded per the 10 CFR 50.75(e)(1)(iv) method. Consequently, no trust agreements exist.

3.0 FINANCIAL ASSURANCE STATUS ANNUAL REPORT

This section provides a discussion of the 10 items required by 10 CFR 50.82(a)(8)(v)-(vii). The reporting requirements and corresponding MARAD information are provided below.

3.1 Report required by 10 CFR 50.82(a)(8)(v)

(A)

1. The amount spent on decommissioning, both cumulative and over the previous calendar year,
Within the context of protective storage as a decommissioning baseline, all the funds spent by MARAD in CY2020 and preceding years have been for decommissioning purposes. MARAD's budget requests through FY2021 provide for a baseline protective storage component of cost. This strategy provides sufficient resources to MARAD to maintain the NSS if there is an interruption in the DECON-LT project for any reason.

During the CY 2020 reporting period, MARAD obligated approximately \$ [REDACTED] million. The cumulative obligations since CY 2017 are approximately \$ [REDACTED] million.

2. The remaining balance of any decommissioning funds, and
For the DECON-LT project, after subtracting the total obligated funds (\$ [REDACTED] million) from the total appropriated funds (\$131 million), the remaining balance to complete decommissioning is \$ [REDACTED] million at the beginning of CY 2021.

3. The amount provided by other financial assurance methods being relied upon;
None. MARAD, as a Federal licensee, relies solely on the 10 CFR 50.75(e)(1)(iv) method.

(B) An estimate of the costs to complete decommissioning, reflecting any difference between actual and estimated costs for work performed during the year, and the decommissioning criteria upon which the estimate is based;

MARAD's CY 2020 site-specific DECON-LT cost estimate is \$137.1 million based on escalation from the 2019 estimate (see Section 2.4 above for the escalation basis). This estimate is effective as of December 2020. The pre-award estimate of the costs to complete decommissioning (e.g., procure fixed price decommissioning and license termination services) is \$ [REDACTED] million based on the following:

- [REDACTED]
- [REDACTED]

(C) Any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report; and

There have been no modifications to MARAD's financial assurance methodology, which is limited to the use of Federal appropriations.

(D) Any material changes to trust agreements or financial assurance contracts.

Not applicable because MARAD, as a Federal licensee, relies solely on the 10 CFR 50.75(e)(1)(iv) method.

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3.2 Report required by 10 CFR 50.82(a)(8)(vi)

If the sum of the balance of any remaining decommissioning funds, plus earnings on such funds calculated at not greater than a two percent real rate of return, together with the amount provided by other financial assurance methods being relied upon, does not cover the estimated cost to complete the decommissioning, the financial assurance status report must include additional financial assurance to cover the estimated cost of completion.

Not applicable to MARAD.

3.3 Report required by 10 CFR 50.82(a)(8)(vii)

After submitting its site-specific DCE required by paragraph (a)(4)(i) of this section, the licensee must annually submit to the NRC, by March 31, a report on the status of its funding for managing irradiated fuel.

The final disposition and status of the Atomic Energy Commission's nuclear fuel utilized by the NSS is described in the September 21, 1973, Operations Report and also in Section 1.3.1 of the Final Safety Analysis Report as follows:

Thirty six spent fuel elements (Core I and Ia) were shipped from Galveston, TX to the US Atomic Energy Commission (AEC) - Savannah River Plant, Aiken, SC in nine shipments from October 4 through December 21, 1972 via a lowboy trailer using the Piqua/Elk River Shipping cask.

The 10 CFR 50.82(a)(8)(vii) report must include the following information, current through the end of the previous calendar year:

- (A) The amount of funds accumulated to cover the cost of managing the irradiated fuel;

MARAD is storing no irradiated nuclear fuel and, therefore, has no accumulated funds to cover such costs.

- (B) The projected cost of managing irradiated fuel until title to the fuel and possession of the fuel is transferred to the Secretary of Energy; and

MARAD is storing no irradiated nuclear fuel and, therefore, has no need to project such costs.

- (C) If the funds accumulated do not cover the projected cost, a plan to obtain additional funds to cover the cost.

MARAD is storing no irradiated nuclear fuel and, therefore, has no need to obtain additional funds to cover such cost.

4.0 PROJECT FUNDING

As noted in section 1.2 above, the NSS decommissioning project is fully funded. The congressional appropriations in FY 2017 and FY 2018 provided \$131.0 million for MARAD's DECON-LT project. Continuing annual appropriations of \$3.0 million support baseline licensed activities of nuclear compliance, radiological protection and radiological emergency response, and custodial care of the NSS (including layberthing). MARAD takes these annual appropriations into account only after such appropriations are enacted. For CY 2020, the annual baseline activities funds were sourced from the FY 2020 (January – September 2020) and FY 2021 (October – December 2020) appropriations.

5.0 REGULATORY COMMITMENTS REGARDING DECOMMISSIONING FUNDING

There are two (2) recurring commitments regarding decommissioning funding that are reported on in each annual Decommissioning Funds Status Report. The resolution of any one-time commitments will be described as required. The recurring commitments are described in the following sections.

5.1 *Annual Submittal of New Estimate*

In Reference (f), MARAD revised a regulatory commitment as follows:

The CY2019 estimate is provided in Sections 2.1 and 2.4 of this report.

The CY2020 estimate and its basis are provided in Sections 2.1 and 2.4, respectively.

5.2 *Revised Decommissioning Cost Estimate (DCE)*

In Reference (f), MARAD revised a regulatory commitment as follows:

The site specific DCE will be revised in the License Termination Plan.

In 2020, MARAD continued developing the License Termination Plan (LTP) submittal which is required to include an update to the DCE. The revised estimated date for submitting the LTP is CY2022 and will include a full revision of the DCE.

6.0 TIME REMAINING TO COMPLETE DECOMMISSIONING

The license termination deadline for the NSS is December 3, 2031, based on the Permanent Cessation of Operations milestone date of December 3, 1971. Decommissioning is scheduled to be complete well within the allowed 60-year license termination period.³

³ December 3, 1971 is the de facto date of permanent cessation of operations date based on completing the reactor defueling that date by tensioning the reactor vessel head with six studs

7.0 REFERENCES

- a. Regulatory Guide 1.159, *Assuring the Availability of Funds for Decommissioning Nuclear Reactors*, Revision 1, October 2003
- b. Letter from Mr. Erhard W. Koehler (MARAD) to U.S. Nuclear Regulatory Commission (NRC), dated December 11, 2008, *Submittal of Post Shutdown Decommissioning Activities Report*, Revision 1
- c. Letter from Mr. John B. Hickman (NRC) to Mr. Erhard W. Koehler (MARAD), dated April 23, 2018, *Nuclear Ship SAVANNAH - Issuance Of Amendment 15 to revise the License to allow Dismantlement and Disposal*
- d. Regulatory Guide 1.86, *Termination of Operating Licenses for Nuclear Reactors*, June 1974
- e. Letter from Mr. Erhard W. Koehler (MARAD) to U.S. Nuclear Regulatory Commission (NRC), dated February 27, 2019, *Annual Report for CY2018, Revision 0*
- f. Letter from Mr. Erhard W. Koehler (MARAD) to U.S. Nuclear Regulatory Commission, dated April 24, 2020, *Submittal of Decommissioning Funds Status Report for Calendar Year (CY) 2019*