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11. ADMINISTRATIVE AND PROCEDURAL SAFEGUARDS

The NS Savannah is to be operated in accordance with the technical specifications¹⁸ required by federal regulation 10 CFR 50.36. These technical specifications, together with the port operation criteria,² contain the significant design and operating limitations for the ship and supersede all other relative documents. These criteria are established to ensure the health and safety of the public in all operations of the NS Savannah.

11.1. Plant Operating Manual

Routine operations of the reactor plant are conducted in accordance with procedures in the NS Savannah Reactor Plant Operating Manual. This manual contains plant standards, standard operating procedures, and emergency instructions.

Plant Standards

The plant standards define, in general terms, the normal mode of plant operations and present the minimum conditions for plant operations. The standards also define the required periodic tests and present the established set points for instrumentation controls, alarms, and safety system trips.

Standard Operating Procedures

The standard operating procedures outline those procedures required for normal operation of the plant, including procedures for start-up, shutdown, individual system operation, auxiliary plant, and others required for infrequent normal operations, such as containment-vessel leak-rate tests, radioiodine filter tests, etc.

Emergency Instructions

The emergency instructions define the operator's course of action for abnormal operation of the reactor plant. These emergency instructions include:

1. Emergency operating procedures---for major casualties to the reactor plant.
2. Action following annunciated condition---for investigation of alarms.
3. Equipment failure procedures---for operation with equipment that has failed or is malfunctioning.
4. Emergency plans---for handling a major incident.

The emergency instructions provide the operator with directions for action in abnormal situations that may arise during operation of the power plant.

Special Operating Instructions

Under certain conditions, it may be desirable to operate the plant in a manner different from procedures in the operating manual. Thus, the Chief Engineer, with the concurrence of the Master, may prepare a special operating instruction to define a special mode of operation. These special operating instructions are revoked as soon as they are no longer needed. If a particular special operating instruction is needed for an extended period of time, it is incorporated into the operating manual as a standard operating procedure.

Revision of Plant Operating Manual

The operating manual is maintained by the shore staff of the ship operator or his designee. Revisions or additions to the manual are prepared either by the shore staff or the ship's officers, and are approved by the shore staff, the Master of the ship or his designate, and the Chief Engineer or his designate, before they become effective.

11.2. Health Physics Manual

The radiological monitoring and other shipboard health physics activities are carried out in accordance with the NS Savannah Health Physics Manual. This manual describes the standards, policies, and

detailed instructions relative to radiation protection. It also specifies operational procedures for health physics personnel.

The latest edition of the health physics manual reflects operational experience aboard the Savannah, and includes evaluation of procedures and techniques originally recommended by ORNL. The standards and policies of the manual are in accordance with the provisions of Standards for Protection Against Radiation¹ and with the technical specifications.

11.3. Water Quality Manual

The NS Savannah Water Quality Program²⁰ sets forth the standards and procedures of the water quality program for the ship. It contains water treatment criteria, detailed procedures, analytical methods, data sheets, and other aids that pertain to specific programs for the guidance of those responsible for water chemistry aboard the ship.

11.4. Vendor Manuals and Engineering Drawings

The NS Savannah is supplied with complete sets of manuals applicable to vendor equipment aboard the ship; these provide detailed operational and maintenance instructions for the individual components. Engineering drawings furnish information on components and system arrangements aboard the ship. The shore staff provides a continuing program of upgrading to maintain the shipboard drawings in an up-to-date condition.

11.5. Ship Records

All ship's records (in the form of log books, data sheets, etc.) that relate to operation of the nuclear propulsion plant are reviewed daily by the chief engineer or his designee. This review serves as a check on the proper operation and performance of the plant.

11.6. Training

The competence level of the ship's staff is maintained by a program of training and review. The objective of this program is the assurance that the ship's officers, both engineering and deck, meet the high standards established for the NS Savannah.