Department of Energy
Washington, D.C. 20545

Docket No. 50-537
HQ:S:83:190

JAN 21 1983

Mr. Paul S. Check, Director
CRBR Program Office
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Check:

ADDITIONAL INFORMATION FOR PRELIMINARY SAFETY ANALYSIS REPORT (PSAR) CHAPTERS 6 AND 9

Enclosed is part of the additional information requested by your staff for the Clinch River Breeder Reactor Plant PSAR Chapters 6 and 9. It will be added into the PSAR in a future amendment. The remainder will follow shortly.

Any questions regarding the enclosure may be addressed to Mr. A. Meller (FTS 626-6355) or Mr. D. Florek (FTS 626-6188) of the Oak Ridge Project Office staff.

Sincerely,

John R. Longenecker

John R. Longenecker
Acting Director, Office of
Breeder Demonstration Projects
Office of Nuclear Energy

Enclosure

cc: Service List
Standard Distribution
Licensing Distribution

D001

ENCLOSURE

ITEM: Chapter 6 of the PSAR should reference stainless steel properties

RESOLUTION: See attached mark-up of Chapter 6, Engineered Safety Features, Section 6.1.

CHAPTER 6.0 ENGINEERED SAFETY FEATURES

6.1 GENERAL

The Engineered Safety Features are the provisions in the plant which are designed to prevent the occurrence or to mitigate the effects of serious accidents. For this plant, the Engineered Safety Features are listed in Table 6.1-1. Descriptions of the Containment Systems and the Habitability Systems are provided in Sections 6.2 and 6.3 of this chapter. Descriptions of the Cell Liner System and the Catch Pan/Fire Suppression Deck System are provided in Sections 6.4 and 6.5. Other engineered safety features are described in their particular sections as identified in Table 6.1-1.

All Engineered Safety Features shall apply, as a minimum, all pertinent ASME Code requirements for materials properties. Any application of cold worked stainless steel shall require the material yield stress to be less than 90,000 psi. The fracture toughness of ferritic material shall meet code requirements.

ENCLOSURE

ITEM: Chapter 9 of the PSAR should include a statement regarding ALARA, and should reference PSAR Section 15.7.3.7

RESOLUTION: See attached mark-up of PSAR Sections 9.2.1, Design Basis and 9.2.3, Safety Evaluation.

9.2 Nuclear Island General Purpose Maintenance System

The Nuclear Island General Purpose Maintenance Equipment System provides general purpose facilities, tools, and fixtures in support of maintenance operations unique to the Nuclear Island. Equipment provided by the Nuclear Island General Purpose Maintenance Equipment System is used in conjunction with equipment as necessary from the Balance of Plant General Purpose Maintenance Equipment System to provide complete maintenance support for the Nuclear Island.

9.2.1 Design Basis

The equipment is designed to keep plant personnel radiation exposures as low as reasonably achievable as explained in Appendix 12A

The Nuclear Island General Purpose Maintenance System provides general purpose equipment and facilities to support maintenance activities for visual inspection, handling, cleaning, decontaminating, disassembly, and repair of sodium-wetted and/or radioactive components. The equipment is designed to support repairs in place wherever possible. The design is also based on maintenance by hands-on, semi-remote, and remote techniques, in that preferential order.

9.2.2 System Description

The Nuclear Island General Purpose Maintenance System consists of equipment, facilities, and subsystems as described below.

a. Facilities

1. The Decontamination Facility, located in the radioactive waste area of the RSB, is a set of negative-pressure, low-leakage rooms in which trace amounts of sodium and low-level radioactive contamination can be removed from components. From this facility, gaseous and liquid effluents and solid wastes are collected and directed to the appropriate radwaste systems for controlled disposal. (See Section 11.2 and 11.3)

2. The Regulated Shop is an area of the Maintenance Shop and Warehouse Building in which machine tools are provided for use on low-level radioactive parts and for which controlled access may be established. From this facility gaseous and liquid effluents and solid wastes are collected and directed to the appropriate radwaste systems for controlled disposal.

2. Handling equipment is provided to move heavy or bulky components. The major equipment is the Large Component Transporter, which provides a platform with tiedown facilities and is moved along the EVTM rails to transport large components between RCB and RSB. The Large Component Transporter (LCT) is also used as a working platform over the reactor for service of the control rod drive mechanism. The Large Component Transporter is fitted with permanent passive seismic restraints (similar to the EVTM) to prevent the LCT from leaving the tracks during a seismic event and also with manually engaged permanent wheel chocks to prevent motion after placement at the desired position along the tracks. Another piece of handling equipment is the Large Lift Fixture, a load-spreading bar for attachment of large equipment to building cranes.

d. Maintenance and Inspection Equipment

1. Maintenance stands are provided to support the primary and intermediate sodium pumps and pump motors during performance and maintenance away from their normal locations.

2. Portable equipment is provided for hands-on and semi-remote cutting, rewelding, and weld inspection of sodium piping.

3. Remote viewing equipment is provided for inservice inspection of components in inerted or radioactive cells.

9.2.3 Safety Evaluation

The Nuclear Island General Purpose Maintenance Equipment System has no nuclear safety function in the operation of the plant. Radioactive fluids or solids resulting from use of the equipment are directed to the waste processing or ventilation systems for cleanup and/or stabilization before discharge to the environment. See Section 11.2 and 11.3 for a discussion of these systems. No direct discharges to the environment are made from the Nuclear Island General Purpose Maintenance Equipment System.

A potential for a significant sodium-water reaction exists in the LCCV. It has been shown that the maximum postulated reaction and its products will be retained within the system and cell and will not perturb the reactor systems during any operating mode. ~~Refer~~ Section 15.7.3.7$.

The justification for the LCCV design pressure is discussed in

9.2.4 Tests and Inspections

Tests and Inspections of Nuclear Island General Purpose Maintenance Equipment are those involved with assuring proper condition and serviceability and, where applicable, calibration prior to use. The equipment itself has no nuclear safety classification . Handling equipment to be used for critical lifts (Class A & B) will be load tested per RDT-F8-6T.