

#800

March 2, 1983

TO: CRBRP PSAR SET HOLDERS
FROM: J. G. Rando
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PSAR Coordinator

50-537

Attached page is being provided to replace PSAR page number 9.4-1 which was recently issued with PSAR Amendment 76.

A printing error was discovered while incorporating Amendment 76 into the PSAR in that page number 9.4-1a was inadvertently not printed on the reverse side of page number 9.4-1. Kindly discard PSAR page 9.4-1 issued with the Amendment 76 packet and replace with page 9.4-1 and 9.4-1a attached.

Should there be any questions regarding the above, I can be contacted at telephone number 201-265-2000 Extension 3545.


J. G. R.

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9.4 PIPING AND EQUIPMENT ELECTRICAL HEATING

9.4.1 Design Basis

The piping and Equipment Electrical Heating System provides the electrical heaters, electrical heater mounting hardware, heater power controllers and the related temperature measuring and controlling instrumentation and equipment required to heat the following sodium containing process systems and components:

- Reactor Enclosure*
- Reactor Refueling (Storage Tank)
- Reactor Heat Transport (Primary and Intermediate) Systems
- Steam Generation System (Dump Tanks and Sodium Water Reaction Product Tanks)
- Auxiliary Liquid Metal System
- Inert Gas Receiving and Processing System
- Sodium Impurity Monitoring System

This heat is required to preheat these sodium process systems prior to fill, to prevent sodium freezing when system heat sources such as reactor decay heat and pumping heat become insufficient, and to maintain pre-established temperature differences in the system.

To perform the dry heat-up function, the Electrical Heating System shall be capable of preheating the sodium process systems from ambient temperature to any temperature between ambient and a maximum of approximately 450°F before the system is filled with sodium. The heating requirements for each trace heated component in the above systems will be determined by the particular sodium process system.

The Electrical Heating System shall also be capable of providing the applicable heatup rate for the particular system or components when filled with sodium and of holding process system temperatures when filled with sodium. Heat provided by this system can be used to melt frozen sodium in piping or components. Freezing of sodium in major systems or components is considered unlikely and is an abnormal event.

The temperatures of all measured points shall be indicated locally and in the Main Control Room. The thermocouple used for monitoring shall be separate from the thermocouple used for control. Thermocouple leads as a matter of good design practice shall use different paths from heater power conductors. The electrical heating, temperature monitoring, and temperature control lines are all non-safety-related. As such, the electrical heating, monitoring, and control lines shall be separated from all Class 1E lines per IEEE Std. 384-1981.

All piping and equipment in inaccessible areas shall be provided with spare heaters and thermocouples. The spares shall be accessible in a junction box in a man-safe location. All heater circuits shall be provided with ground fault protection. All instruments and controls shall be testable in place.

*The Trace Heating System which services the reactor vessel head, control rod drive lines, and vessel support area is discussed in Section 5.2.1.6.

Technical Specifications will be provided in the FSAR for the operation, as appropriate, of trace heated safety related equipment to consider thermocouple and heater malfunctions.