Enclosure 1

Change to Hermes PSAR Chapter 5

(Non-Proprietary)

5.1.1.4 Primary Loop Piping

The primary loop piping consists of the interconnecting piping and small components not specifically allocated within the other architectural elements. This includes cross connection piping, valves, and interfaces with the inventory management system.

The primary loop piping does not perform any safety-related functions and is not credited to mitigate the consequences of postulated events.

The PHTS piping is made of austenitic stainless steel and designed to ~~the~~ accommodate ~~ASME B31.3 Code and accommodates~~ the reactor coolant temperature, pressure, and corrosion properties. The section of piping from the PSP discharge to the PHX inlets is termed the "hot leg" and the section of piping from the PHX outlets to the reactor vessel inlet is termed the "cold leg." An anti-siphon feature is implemented in the design that can break the siphon from the reactor vessel if a leak in the PHTS occurs. This feature is discussed in Section 4.3.

Highlighted text was previously changed. Submitted on 2-18-22 (ML22049B556)

5.1.1.5 Primary Loop Auxiliary Heating

The auxiliary heating function provides non-nuclear heating to the PHTS as needed for various operations including initial coolant melt, plant startup and shutdown, and supplemental heating during normal operation. Auxiliary heating maintains the PHTS piping and PHX above the trace heating setpoint temperature. The source of the heat depends on the subsystem or component requiring the heat. For example, electrical heating is used in some areas of the plant that would be susceptible to coolant freezing with the use of insulation alone. Sufficient heating is provided to maintain reactor coolant temperature in external piping and PHX above freezing throughout the filling, operation, and draining processes.

5.1.1.6 Normal Shutdown Cooling

The PHTS provides normal shutdown cooling following plant trips. The transition from power operation to normal shutdown cooling involves a programed rundown of the PSP and intermediate salt pump speeds, to minimize the thermal transient experienced by the reactor vessel and PHTS. Normal shutdown cooling uses the PHRS as the heat sink.

5.1.2 Design Basis

Consistent with PDC 2, the safety-related SSCs located near the PHTS are protected from the adverse effects of postulated PHTS failures during a design basis earthquake.

Consistent with PDC 10, the design of the reactor coolant supports the assurance that specified acceptable system radionuclide release design limits (SARRDLs) are not exceeded during any condition of normal operation, as well as during any unplanned transients.

Consistent with PDC 12, the design of the reactor coolant, in part, ensures that power oscillations cannot result in conditions exceeding specified acceptable SARRDLs.

Consistent with PDC 16, the design of the reactor coolant, in part, provides a means to control the release of radioactive materials to the environment during postulated events as part of the functional containment design.

Consistent with PDC 60, the design of the PHTS supports the control of radioactive materials during normal reactor operation.

Consistent with 10 CFR 20.1406, the design of the PHTS, to the extent practicable, minimizes contamination of the facility and the environment, and facilitate eventual decommissioning.