As part of the NRC audit of PSAR Chapter 6, NRC staff asked a question regarding qualification testing of the DHRS.

The PSAR includes commitments to test safety-related structures, systems, and components to ensure the successful performance of safety functions. As described in PSAR Section 6.3.3, the DHRS will meet PDC 4, which requires that the DHRS can perform its safety function under the environmental conditions associated with normal plant operation as well as during postulated events. As described in PSAR Chapter 12, Appendix B, Section 2.3.3, the adequacy of the design will be verified using methods including the performance of qualification tests. Qualification testing for the safety-related portion of the DHRS will be defined in a test plan that includes appropriate acceptance criteria and demonstrates the system reliability and adequacy of performance under conditions that simulate the most adverse design basis conditions.

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The results from separate and integral effects tests that support validation of the postulated event boundary condition will be available during the operating license application phase, and startup qualification testing results will be available during the operation phase.

In addition, the PSAR includes commitments to ensure the operability of the DHRS through inspection and testing, which ensures degradation mechanisms will not prevent the DHRS from performing its safety function. PSAR Section 14.1 identifies “decay heat removal system operability” as an expected limiting condition of operation that will be included with the technical specifications in the application for an Operating License. As described in PSAR Section 6.3.3, the DHRS will meet PDC 36 by including the capability for online monitoring and inspection. When the reactor is operating above threshold power, the DHRS is in an “always on” operating condition which provides

an ongoing demonstration of system availability. These features demonstrate conformance with the requirements in PDC 37.