

7.0 INSTRUMENTATION AND CONTROL SYSTEMS

Instrumentation and Control (I&C) Systems are the systems that assure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, or the capability to prevent or mitigate the consequences of accidents.

Chapter 7 of the North Anna 3 Combined License (COL) application Final Safety Analysis Report (FSAR) incorporates by reference, with no departures or supplements, Chapter 7, "Instrumentation and Control Systems," of Revision 5 of the Economic Simplified Boiling Water Reactor (ESBWR) Design Control Document (DCD). Chapter 7 of the ESBWR DCD contains the Tier 2 information. The ESBWR DCD Tier 1 contains design acceptance criteria / inspections, tests, analyses, and acceptance criteria (ITAAC) information related to the Chapter 7 safety and non-safety systems. The North Anna 3 COL application Part 10: Tier 1/ITAAC incorporates the ESBWR DCD Tier 1 by reference with no departures or supplements. The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the application and checked the referenced DCD to ensure that no issue relating to this chapter remained for review.¹ The NRC staff's review confirmed that there is no outstanding issue related to this chapter.

The staff is reviewing the information in DCD Tier 2, Chapter 7 and the Tier 1 information on Docket No. 52-010. The results of the NRC staff's technical evaluation of the information related to the I&C Systems incorporated by reference in the North Anna 3 COL application FSAR will be documented in the staff safety evaluation report (SER) on the design certification application for the ESBWR. The SER on the ESBWR design certification application is not yet complete, and this is being tracked as Open Item 1-1. The staff will update Chapter 7 of this SER to reflect the final disposition of the design certification application.

¹ See Section 1.2.2, "Finality of Referenced NRC Approvals," for a discussion on the staff's review related to verification of the scope of information to be included within a COL application that references a design certification.