

Service Water Position- Seabrook TS 3.7.4:

Background:

The Seabrook Service Water System consists of two independent loops, each of which can operate with either a service water pump train or a cooling tower pump train. Each service water loop consists of a service water pump and the piping, valves, and other components necessary to provide the flow path required for heat removal. Each service water cooling tower loop consists of a service water cooling tower pump and the necessary piping, valves and other components required to provide its flow path. The OPERABILITY of the Service Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses, which also assumes loss of either the cooling tower or ocean cooling.

Seabrook Technical Specification Amendment 32 was approved by the NRC staff on October 5th, 1994. This amendment evaluated the impact of SW TS allowed out of service time for both single and dual train unavailability of the cooling tower. The proposed change and acceptance by the NRC staff recognized that the change was intended to redefine the requirements for both the PCCW and Service water system as well as the UHS (Cooling tower). The LAR was proposed to take advantage of the redundancy in the SW and UHS designs to provide enhanced operational flexibility. The safety evaluation in the amendment stated that the NRC staff agreed with the risk based methodology and assumptions used and that the change in SW system unavailability due to the proposed TS amendment and the resulting increase in the total reactor core damage frequency are insignificantly small. The staff also noted that the consolidation of the SW system and UHS into one TS is acceptable and necessary to achieve and maintain clarity within the specifications of the overall requirements of system operability.

The amendment included separate allowed out of service times for different portions of the system, implying that the function remains, albeit with reduced redundancy. The NRC approved TS 3.7.4 Amendment 32 permits the operation of

the system with single train cases based on a risk based evaluation of the protection provided by the unique system lineup for the specified period listed in the various action statements. The amendment concluded that the proposed changes to the TS accurately reflect the SW system and the UHS design basis and provide an adequate level of safety while providing considerable flexibility.

Operability basis

A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s), and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

The current NRC guidance on operability determinations is contained in Inspection Manual Chapter 0326, Operability Determinations & Functionality Assessments for Conditions Adverse to Quality or Safety (Dec. 3, 2015). Section C.10, entitled “Support System Operability”, of that guidance includes the following provisions related to operability of support systems:

Upon discovery of a support system that is not capable of performing its related support function(s), the most important consideration is the possibility of having lost all capability to perform a specified safety function. Upon declaring a support or supported system inoperable in one train, the required actions in the TS should be implemented. IMC 0326 further notes that the Technical Specification may contain specific requirements or allowances regarding support systems. In all cases, a licensee’s plant-specific TS is governing.

IMC 0326 describes the current licensing basis (CLB) as the set of NRC requirements applicable to a specific plant and a licensee's written commitments for ensuring compliance with and operation within applicable NRC requirements and the plant-specific design basis (including all modifications and additions to such commitments over the life of the license) that are docketed and in effect. The CLB includes the NRC regulations contained in 10 CFR parts 2, 19, 20, 21, 26, 30, 40, 50, 51, 52, 54, 55, 70, 72, 73, 100 and appendices thereto; orders; license

conditions; exemptions; and technical specifications. It also includes the plant-specific design-basis information defined in 10 CFR 50.2 as documented in the most recent final safety analysis report (FSAR) as required by 10 CFR 50.71 and the licensee's commitments remaining in effect that were made in docketed licensing correspondence such as licensee responses to NRC bulletins, generic letters, and enforcement actions, as well as licensee commitments documented in NRC safety evaluations or licensee event reports.

The safety evaluation associated with amendment 32 is not actually part of the regulated licensing basis. Consequently, a deterministic judgment that the current Seabrook Technical specification was incorrectly approved by the NRC via Amendment 32 in 1994 should not be made. The Seabrook 20+ year old licensing basis (TS) remains as originally approved, notwithstanding the current regulatory approach described in the NRC Inspection Manual (but not in any regulation). The current TS allow removal of redundant portions of SW for limited time periods as recognition of the low probability for occurrence of the corresponding event. Any new changes to the language of the TS may provide for greater clarity, but offer no substantial offsetting increase in safety.