

19M Fire Protection Probabilistic Risk Assessment

The information in this appendix of the reference ABWR DCD, including all subsections, tables, and figures is incorporated by reference with the following departures and supplement.

STP DEP 1.1-2

STD DEP 1.2-1

STP DEP 1.2-2

STD DEP T1 2.4-3

STD DEP T1 2.14-1 (Table 19M-2)

STD DEP T1 3.4-1 (Table 19M-2)

19M.6.3 STP 3 & 4 FIVE Review

The ABWR FIVE analysis was reviewed, based on the proposed plant departures and STP 3 & 4 site-specific characteristics. The following summarizes the risk impact for deviations potentially affecting the FIVE results.

STP DEP 1.1-2

The use of a shared Fire Protection Pump House and Storage Tanks does not affect the FIVE analysis results. The FIVE analysis provides an assessment of fire risk as a result of fires internal to the plant, based on plant components or transient fires damaging safe shutdown systems. Since STP 3 & 4 do not share fire areas where safe shutdown systems are located, and it is extremely unlikely that there will be simultaneous fires in areas of the plant affecting safe shutdown systems, it is extremely unlikely that fire protection systems for both units will need to function at the same time.

STD DEP 1.2-1

The Reactor Internal Pump MG Sets (2) and their switchgear are moved from the Control Building to the Control Building Annex. The relocation of the MG sets lowers the ignition frequencies for fire compartments in the Control Building. Since there are fewer cables affecting Safe Shutdown Systems in the Annex, the impact of the change is an overall reduction in the Fire Risk.

STP DEP 1.2-2

The potential turbine building modifications do not affect the generic fire frequencies used to perform the FIVE analyses described in the various FSAR Chapter 19 sections. Potential changes to turbine building design do not affect the loss of offsite power event models used to quantify the effects of fire in the turbine building. Because the generic initiating event frequencies are unaffected, and the event models are unaffected, the results of the FIVE analyses for the turbine building fire scenarios are unaffected.

STD DEP T1 2.4-3

Changes to the RCIC pump reduce the overall fire risk. As discussed in the internal events results, the new RCIC pump design is expected to increase RCIC reliability and reduce overall risk. This reduction also occurs in the fire risk results, due to the importance of the RCIC pump operation following a control room fire.

Overall, the existing ABWR FIVE results are bounding for the STP 3 & 4.

19M.7 COL License Information

The following site-specific supplement address COL License Information item 19.12.

This COL license information item is addressed in Subsection 19.9.12.

**Table 19M-2 Weighting Factors for Adjusting Generic Location Fire Frequencies
for Application to Plant-Specific Locations
(References FIVE Table 1.1) (Continued)**

Plant Location (Table 1.1 Of Five)	Weighting Factors¹ (Wfl) (Table 1.1 Of Five)	Weighting Factor (Wfl) ABWR Analysis	WFL Value
Cable Spreading Room	The number of units per site and divide by the number of rooms per site.	Not applicable, due to the multiplexed systems data communication functions there are no cable spreading rooms in the ABWR. This is a significant difference between the plants characterized in FIVE and the ABWR.	N/A
Plant-Wide Components (cables, transformers, elevator motors, hydrogen recombiner/ analyzer).	The number of units per site.	One reactor per site.	1

