3.1 Conformance with NRC General Design Criteria

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

STP DEP 8.2-1

STP DEP 1.1-2

STD DEP T1 2.4-1

STP DEP T1 2.5-1

STD DEP T1 2.15-1

STD DEP T1 3.4-1

STP DEP T1 5.0-1

3.1.2.1.2.2 Evaluation Against Criterion 2

STP DEP T1 5.0-1

The first paragraph in this subsection of the reference ABWR DCD is replaced in its entirety with the following text.

The ABWR design is designated as a standard plant. The bases for safety-related (Subsection 3.1.2.1.1.2) structures, systems, and components are based upon site parameters that envelop the majority of potential sites in the contiguous United States, as defined in the reference ABWR DCD Chapter 2. The design bases for these structures, systems, and components reflect this envelope of natural phenomena, including appropriate combinations of the effects of normal and accident conditions. The site characteristics for STP 3 & 4 are bounded by those site parameters, with the exception of flood level and maximum probable precipitation. With respect to flood level and maximum probable precipitation, the ABWR design for STP 3 & 4 has been modified as appropriate to reflect the STP 3 & 4 flood level and maximum probable precipitation. Therefore, the ABWR safety-related structures, systems, and components for STP 3 & 4 are designed to withstand the most severe of the natural phenomena that have been historically reported for STP and the surrounding area and comply with Criterion 2. The STP 3 & 4 flood level and maximum probable precipitation are discussed in more detail in FSAR Table 2.0-2.

STP 3 & 4 also have safety-related site-specific structures, systems, and components that are not within the ABWR Standard Plant scope. As a minimum, these structures, systems, and components have been designed to withstand the natural phenomena that are applicable to the ABWR safety-related structures, systems, and components for STP 3 & 4. Therefore, those structures, systems and components are designed to withstand the most severe of the natural phenomena that have been historically reported for STP and the surrounding area and comply with Criterion 2.

3.1.2.1.5.2 Evaluation Against Criterion 5

STP DEP 1.1-2

The information in this Subsection of the reference ABWR DCD is replaced in its entirety with the following text.

STP 3 & 4 is a dual-unit station. Therefore, the sharing of specified structures, systems, and components important to safety between these dual units is addressed.

The water supply for fire protection is shared by STP 3 & 4. Regulatory Guide 1.189, Revision 1, paragraph 3.2.1.h, states that a common water supply may be utilized for multi-unit nuclear power plant sites with a common yard fire main loop. The risk impact for a shared water supply is addressed by the Fire Protection Probabilistic Risk Assessment for STP 3 & 4 contained in Appendix 19M. 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 both units affecting safe shutdown areas, it is extremely unlikely that protection systems for both units will need to function at the same time.

Based on the discussion above , it is concluded that sharing of the Fire Water Supply will not significantly impair their ability to perform its safety function, including, in the event of an accident in one unit, an orderly shutdown and cooldown of the remaining unit, and it is concluded that GDC 5 is met.

3.1.2.2.8.2.2 Offsite Electric Power System

STP DEP 8.2-1

The information in this subsection of the reference ABWR DCD is replaced in its entirety with the following text.

Offsite power is transmitted to the plant switchyard via multiple 345kV circuits on several rights-of-way. Each unit has three separate 345kV circuits from the switchyard that tie into reserve auxiliary transformer (RAT) A, RAT B and the main power transformer, respectively. Each transformer provides a feed to each of the Class 1E buses. The main power transformer feed is via three unit auxiliary transformers (UAT). In normal operation, two Class 1E buses are fed by the UATs and the remaining safety bus is fed by a RAT. This configuration provides two separate paths of power that are immediately accessible, without bus transfers, to the offsite power system. The transmission circuits are sized sufficiently to meet the Class 1E load requirements.

The offsite electric power systems are designed to meet the requirements of Criterion 17. For further discussion see the following section:

Chapter/Section	Title
8.1.1	Offsite Transmission Network
8.1.2	Electric Power Distribution System
8.2	Offsite Power Systems

3.1.2.3.3.2 Evaluation Against Criterion 22

STD DEP T1 3.4-1

Components of protection systems are designed so that the mechanical, thermal and radiological environment resulting from any accident situation in which the components are required to function do not interfere with the operation of that function.

The redundant sensors are electrically and physically separated. Only circuits of the same division are run in the same raceway. ~~Multiplexed~~ Data communication *signals are carried by fiber optic medium to assure control signal isolation.*

3.1.2.4.16.2 Evaluation Against Criterion 45

The following site-specific supplemental information is provided in the first sentence of the first paragraph of this subsection.

All important components in the ~~ABWR Standard Plant scope~~ STP 3 & 4 Cooling Water Systems, including important components within the ABWR Standard Plant *are located in accessible locations to facilitate periodic inspection during normal plant operation.*

3.1.2.6.2.2 Evaluation Against Criterion 61

3.1.2.6.2.2.1 Fuel Storage and Handling System

STP DEP T1 2.5-1

Fuel storage pools have adequate water shielding for stored spent fuel. Adequate shielding for transporting fuel is also provided. Liquid level sensors are installed to detect low pool water level. Buildings are designed to meet Regulatory Guide 1.13 criteria. The fuel storage pools are designed with no penetrations below the water level that is needed for maintenance of adequate shielding at the operating floor and cooling. Check valves are used in pool circulation lines to prevent siphoning in the event of a break of such a line.

~~New fuel storage racks are located in the concrete fuel storage vault. No cooling or air filtering system is required. These storage racks preclude accidental criticality (see evaluation against Criterion 62). The new fuel storage racks do not require any specialinspection and testing for nuclear safety purposes.~~

STD DEP T1 2.15-1

Per Regulatory Guide 1.143, the substructure of the radwaste building ~~is designed as Seismic Category I and it~~ is sufficient to contain the maximum liquid inventory expected to be in the building.

3.1.2.6.3.2 Evaluation Against Criterion 62

STP DEP T1 2.5-1

Appropriate plant fuel handling and storage facilities are provided to preclude accidental criticality for new and spent fuel. Criticality in new and spent fuel storage is prevented by presence of fixed neutron absorbing material. Fuel elements are limited by rack design to only top-loaded fuel assembly positions. The ~~new and spent~~ fuel racks are Seismic Category I components.

~~New fuel is placed in dry storage in the top-loaded new fuel storage vault. This vault contains a drain to prevent the accumulation of water. Neutron absorbing material in the new fuel storage vault racks prevents an accidental critical array, even in the event the vault becomes flooded or subjected to seismic loadings.~~

3.1.2.6.4.2 Evaluation Against Criterion 63

STD DEP T1 2.4-1

The following change is made in the second sentence of the first paragraph of this subsection.

In addition ~~two~~ <u>three</u> *loops of the RHR System can provide additional cooling of the spent fuel pool, as required.*