4.0 INTERFACE REQUIREMENTS

10 CFR 52.47(a)(25) requires the interface requirements to be met by those portions of the plant for which the application does not seek certification. 10 CFR 52.47(a)(26) requires justification that compliance with the interfaces requirements be verifiable through inspection, testing (either in the plant or elsewhere), or analysis. An COL applicant that references the Certified Design must provide design features or characteristics that comply with the interface requirements for the plant design and inspections, tests, analyses, and acceptance criteria (ITAAC) for the site-specific portion of the facility design, in accordance with 10 CFR 52.80(a).

The intent is that the interface requirements in the Final Safety Analysis Report (FSAR) define key, safety-significant design attributes and performance characteristics of the site-specific, out-of-scope portion of the plant which must be provided in order for the certified portions of the U.S. EPR standard design to comply with the design commitments in the FSAR.

This section provides the Tier 1 material for interface items. No Tier 1 information is provided for the conceptual design portions that are COL applicant scope.

4.1 Site Specific Structures

Design Description

Site specific structures that are not within the scope of the certified design will be designed for any facility which has adopted the U.S. EPR certified design. The site specific structures will meet the interface requirements defined below.

Interface Requirements

Certain design bases of the U. S. EPR are to be met by the COL applicant in the design of the site specific structures.

Failure of any of the site specific structures not within the scope of the certified design shall not cause any of the Seismic Category I structures within the scope of the certified design to fail.

4.2 Fire Protection Storage Tanks and Building

Design Description

Site specific structures that are not within the scope of the certified design will be designed for any facility which has adopted the U.S. EPR certified design. The site specific structures will meet the interface requirements defined below.

Interface Requirements

Certain design bases of the U. S. EPR are to be met by the COL applicant in the design of the site specific structures.

The COL applicant will provide the design of the fire protection storage tanks and building. This building will house the fire protection system and fire pump with the storage tanks in close proximity to the pump building.

4.3 Switchgear Building

Design Description

Site specific structures that are not within the scope of the certified design will be designed for any facility which has adopted the U.S. EPR certified design. The site specific structures will meet the interface requirements defined below.

Interface Requirements

Certain design bases of the U. S. EPR are to be met by the COL applicant in the design of the site specific structures.

The COL applicant will provide the design of the Switchgear Building. This building contains the power supply, the instrumentation and controls (I&C) for the Turbine Island and the balance of plant, and the SBO diesel generators. It is located adjacent to and contiguous with the Turbine Building and is physically separate from the NI.

4.4 Turbine Building

Design Description

Site specific structures that are not within the scope of the certified design will be designed for any facility which has adopted the U.S. EPR certified design. The site specific structures will meet the interface requirements defined below.

Interface Requirements

Certain design bases of the U.S. are to be met by the COL applicant in the design of the site specific structures.

The COL applicant will provide the design of the Turbine Building. The Turbine Building houses the components of the steam, condensate, main feedwater cycle, including the turbine-generator. This building is located in a radial position with respect to the Reactor Building, but is independent from the NI. This building is oriented to minimize the effects of any potential turbine generated missiles.

4.5 Deleted.

4.6 Buried Conduit and Duct Banks, and Pipe and Pipe Ducts

Design Description

Site specific systems that are not within the scope of the certified design will be designed for any facility which has adopted the U.S. EPR certified design. The site specific systems will meet the interface requirements defined below.

Interface Requirements

Certain design bases of the U. S. EPR are to be met by the COL applicant in the design of the site specific systems.

The design of buried conduit and duct banks, and buried pipe and pipe ducts is site-specific. Buried Seismic Category I conduit, electrical duct banks, pipe, and pipe ducts will be analyzed and designed in accordance with the specific requirements of the systems.

Buried conduit and duct banks, and pipe and pipe ducts will be designed to withstand the effects of soil overburden, surcharge, groundwater, flood, freezing, seismic soil interaction, and the other effects of burial, as well as natural phenomena such as earthquakes, tornados, hurricanes, and external missiles without loss of capability to perform their safety related functions. In addition, buried conduit and duct banks, and pipe and pipe ducts will be designed and installed to maintain divisional separation. Concrete components of buried items will be designed in accordance with ACI 349-2001, including the exceptions specified in RG 1.142. Steel components of buried items will be designed in accordance with ANSI/AISC N690-1994 (R2004), including Supplement 2.

4.7 Essential Service Water System and Ultimate Heat Sink

Interface requirements for the essential service water system (ESWS) and ultimate heat sink (UHS) are provided in Section 2.7.11 for the emergency makeup water system and Section 4.6 for buried conduit and duct banks, and pipe and pipe ducts.

4.8 Fire Water Distribution System

Interface requirements for the fire water distribution system are provided in Section 2.7.5.

4.9 Security

Interface requirements for Security are provided in Section 3.1.

4.10 Offsite Power System

Interface requirements for the offsite power system, including the switchyard, are provided in Section 2.5.5.

4.11 Power Transmission (Main Generator, Main Transformer, Protection & Synchronization)

Interface requirements for the power transmission system, including the main transformer, protection & synchronization, are provided in Section 2.5.6.

4.12 Access Building

Design Description

Site specific structures that are not within the scope of the certified design will be designed for any facility which has adopted the U.S. EPR certified design. The site specific structures will meet the interface requirements defined below.

Interface Requirements

Certain design bases of the U.S. EPR are to be met by the COL applicant in the design of the site specific structures.

The COL applicant will provide the design of the Access Building. The Access Building controls access to the plants controlled areas and is independent from the NI.