2.4S.14 Technical Specifications and Emergency Operation Requirements

The following site-specific supplement addresses COL License Information Item 2.22.

For STP 3 & 4, safe plant operations are not affected by any of the extreme high water levels discussed in previous subsections of Section 2.4S because required systems and equipment are protected against such levels during extreme flood conditions and, therefore, will remain operational. The following events have been analyzed in Section 2.4S to determine high water level:

- Floods due to probable maximum precipitation (Subsection 2.4S.2).
- Probable maximum precipitation induced river flooding incident (Subsection 2.4S.3).
- Failure of the upstream dams on the Colorado River (Subsection 2.4S.4).
- Breach of the main cooling reservoir (MCR) embankment (Subsection 2.4S.4).
- Probable maximum hurricane surge (Subsection 2.4S.5).
- Probable maximum tsunami (Subsection 2.4S.6).

As discussed in Subsection 2.4S.4, the design basis flood elevation in the power block area is at El. 40.0 ft MSL (NGVD 29). The design basis flood based on a breach of the Main Cooling Reservoir (MCR) embankment (non-seismic Category 1 embankment); details are provided in Subsection 2.4S.4. Site grade elevations in the STP 3 & 4 power block area range from 32 ft MSL to 36.6 ft MSL. For structures located within the Power Block the top of concrete (TOC) floor elevation is 35 ft MSL.

Structures and components whose failure could prevent the safe shutdown of STP 3 & 4 are protected from high water levels, flood or storm surge, and maximum wave run-up, or are designed to preclude the adverse impacts of the design basis flood as described in Section 3.4.

Specific flood protection measures are described in Subsection 2.4S.10. To withstand the static and dynamic forces as a result of the MCR embankment breach, watertight flood protection measures and structural measures are applied to any STP 3 & 4 facilities that have an open passageway to any safety-related facility. Since all watertight doors and hatches for these facilities, at or below 40.0 ft. MSL are normally closed under administrative control, no emergency operating procedures or plant technical specifications (plant shutdown) are required for implementation of flood protection measures.

In addition to the features included in the STP 3 & 4 design to prevent water intrusion into safety-related facilities, for the analyzed postulated events, adequate time exists to allow for remedial actions prior to any detrimental impacts on structures other than safety related. The occurrences of high water levels at STP 3 & 4 under most of the postulated events (Colorado River flooding, hurricanes, or upstream dam failure) are

not sudden events. Thus, adequate time is available to take mitigating actions precluding the effects of potential flooding.

In the case of precipitation caused river level increases, the river level rise is slow enough to allow for appropriate responsive actions. For potential hurricane surge, the approach of a hurricane is a forecasted and trackable event and will allow sufficient time to take mitigating actions. In the case of an upstream dam failure on the Colorado River, the shortest warning time is estimated to be 58 hours, as discussed in Subsection 2.4S.4 allowing for the implementation of remedial, protective actions.

As described in Subsection 2.4S.11.4, no additional emergency protective measures are required to safely shut down STP 3 & 4 in the event of extreme low water levels in the MCR. Due to the large contained volume of the MCR the drop in water level (other than a major breach) would be a gradual event, which provides adequate time to place STP 3 & 4 in safe shutdown conditions. Appropriate emergency operating procedures (EOPs) will include applicable provisions for the MCR, similar to those provided for STP 1 & 2, prior to fuel load (COM 2.4S-1).

Normal and emergency operations of the ultimate heat sink (UHS) are described in Subsection 9.2.5. The UHS basin and the Reactor Service Water (RSW) pumphouse are designed to withstand the hydrodynamic forces associated with the design basis flood event. Furthermore, the top of the UHS basin wall is at elevation 97.5 ft MSL, and the roof of the RSW pump house, located at the UHS, is at elevation 50.0 ft MSL. The top of both structures are above the design basis flood level elevation of 40.0 ft MSL. No emergency protective measures are required to safely shut down STP 3 & 4 provided that the minimum water level in the UHS basin is maintained at or above El. 77.3 ft MSL which ensures a minimum 30 days inventory supply without any makeup. Plant shutdown is initiated when the water level in the UHS basin falls below 77.3 ft MSL.