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# 2.4 HYDROLOGIC ENGINEERING

## 2.4.0 Hydrology Review

Section 2.4 describes the hydrological characteristics of the Clinch River Nuclear (CRN) Site. The site location and description are provided in sufficient detail to support the safety analysis. This section addresses hydrologic characteristics and natural phenomena that have the potential to affect the design basis for the surrogate plant. The section is divided into fourteen subsections:

- 2.4.1 *Hydrologic Description*
- 2.4.2 *Floods*
- 2.4.3 *Probable Maximum Flood on Streams and Rivers*
- 2.4.4 *Potential Dam Failures*
- 2.4.5 *Probable Maximum Surge and Seiche Flooding*
- 2.4.6 *Probable Maximum Tsunami Hazards*
- 2.4.7 *Ice Effects*
- 2.4.8 *Cooling Water Canals and Reservoirs*
- 2.4.9 *Channel Diversions*
- 2.4.10 *Flooding Protection Requirements*
- 2.4.11 *Low Water Considerations*
- 2.4.12 *Groundwater*
- 2.4.13 *Accidental Release of Radioactive Liquid Effluent in Groundwater and Surface Waters*
- 2.4.14 *Technical Specification and Emergency Operation Requirements*

The CRN Site is located on the north bank of the Clinch River arm of Watts Bar Reservoir between Clinch River Mile (CRM) 19 to CRM 14.5 (Reference 2.4.1-1) with preliminary plant grade at elevation 821.0 feet (ft), referenced to the North American Vertical Datum of 1988 (NAVD88). Final grade elevation will be established in consideration of requirements to provide flood protection for safety-related systems, structures and components in accordance with regulatory position 1 of Regulatory Guide 1.59. Water surface elevations and elevations of dam structures are referenced to the National Geodetic Vertical Datum of 1929 (NGVD29) as amended by the 1936 South Eastern Supplemental Adjustment (1936 SESA). For the CRN Site, elevations referenced to the NGVD29 datum reduced by 0.371 feet are equivalent to elevations referenced to the NAVD88 datum.