5.2.3.2.2 Makeup Water Reservoir

Potential seepage from the makeup water reservoir could flow to the Biscayne aquifer within the industrial wastewater facility that discharges hypersaline water to the Biscayne aquifer. The Biscayne aquifer beneath the Turkey Point plant property consists of saltwater. The makeup water reservoir would not be used for the storage of water from the radial collector wells.

The reclaimed water and radial collector well water would be collected in basins beneath the cooling towers, isolated from the cooling water reservoir. However, cooling tower plumes would impact the water stored in the cooling water reservoir. Water in the cooling water reservoir would dilute the fallout from the cooling tower plumes.

Potential seepage would flow into the Biscayne aquifer which contains saltwater and receives hypersaline water from the industrial wastewater facility. Therefore, impacts to the water quality of the Biscayne aquifer as the result of seepage from the cooling water reservoir would be SMALL and would not require mitigation.

5.2.3.2.3 Radial Collector Wells

As described in Subsection 5.2.2.2, it is estimated that the radial collector wells would be recharged at a rate of 97.8 percent (121 MGD) from Biscayne Bay. This would be predominately localized in the area of the radial collector wells. The remaining recharge would be from surface water (e.g., cooling canals) and groundwater beneath the plant property, thereby having minimal effect on the Biscayne aquifer where used as a water source. The majority of recharge flow would come from the local area of the radial collector wells where the groundwater is too brackish for potable water use. As discussed above, any hypersaline water drawn into the aquifer from the cooling canals would not impact potable water supplies, which are further inland, due to the presence of brackish, non-potable water near the coast. Therefore, impacts to groundwater quality as a result of radial collector well operations would be SMALL and not require mitigation.

5.2.3.2.4 Deep Injection Wells

Wastewater generated from the operation of Units 6 & 7, including water from blowdown sump discharge and treated liquid radwaste, would be injected into the Boulder Zone of the lower Floridan aquifer through the use of twelve injection wells. The Boulder Zone is used in south Florida for the disposal of industrial and municipal waste. The Units 6 & 7 deep injection wells would be permitted by FDEP and installed in accordance with FDEP requirements which include the installation and grouting to surface a series of well casings designed to prevent the flow of water between the various aquifer units encountered.

The estimated total injection rate would range from approximately 85 mgd for the 100 percent radial collector well supply to 18 mgd for the 100 percent reclaimed water cooling water makeup

supply. Operation of Unit 6 & 7 would follow the FDEP permitting process for injection well permits including monitoring requirements for groundwater quality and groundwater elevation data in overlying aquifers. Tables 3.6-2 (as amended in ER Revision 3) and 3.6-3 summarize the expected water quality of the effluent discharged to the deep injection wells based on the reclaimed water and radial collector well cooling water makeup options, respectively.

As discussed in Subsection 5.2.1.1.9, the impacts from hydrologic alterations in the USDW resulting from the use of the deep injection wells would be SMALL. The potential impacts to water quality of the USDW would also be SMALL if there are no hydrologic impacts to the USDW. Within the Boulder Zone, groundwater quality impact from operations would be SMALL. Deep injection well operation would be in accordance with other deep injection waste disposal operations currently taking place in south Florida and in accordance with rules and regulations developed by the state of Florida as represented by the current deep well injection permitting process. The overlying USDW would be monitored for hydrologic impacts and water quality.

5.2.3.3 Offsite

Due to the existence of shallow groundwater at or just below ground surface in south Florida, groundwater impacts are more likely to occur than in areas where the water table is deeper. As described above, Unit 6 & 7 would operate its offsite facilities under a SWPPPs/spill prevention plans or procedures which would include the use of environmental best management practices. Any minor spills of diesel fuel, hydraulic fluid, lubricants, or other operational/maintenance-related pollutants along the proposed routes or at offsite facilities would be cleaned up quickly to prevent potential contaminants from moving into the groundwater.

In the unlikely event small amounts of pollutants escape into the environment during offsite facility operations and maintenance, because of operation under a SWPPPs/spill prevention plans or procedures including environmental best management practices, impacts would have only a small, localized, and temporary impact on the water quality at the release. Any impacts to groundwater quality would be SMALL and would not require mitigation beyond those described in this subsection or required by permit.

The offsite roadway improvements described in Chapter 4 could be removed some time after the units are in operation. Should this occur, these locations would be returned to preconstruction conditions by removing the improvements, recontouring the area, and reseeding or replanting native plant species. During restoration activities, environmental best management practices would be followed in accordance with the SWPPP for construction activities. Impacts to groundwater quality would be similar to those during construction and limited to the area of the road improvement removal activity. Therefore, impacts to offsite groundwater quality would be SMALL and not require further mitigation.