

ATTACHMENT C
South Florida Water Management District
Water Use Permit Application
Supporting Information

The following discussions supplement Items F1, F4, G1, G2, G3, and G5 of Page 3 of Form 0645-W01 (08/03), Water Use Permit Application Form (RC-1A, RC-1W, RC-1G).

F.1. Maximum Gallons Per Month Needed

The Cane Island Power Park – Unit 4 project will utilize reclaimed water from the Toho Water Authority Effluent Pipeline as the normal source of makeup for the cooling tower. It will use pumped groundwater as emergency makeup water for the cooling tower. For this reason the normal Unit 4 daily average water demand of 134,000 gallons per day (gpd) may occasionally be exceeded when emergency well water makeup (2,786,000 gpd) is required for the cooling tower. In the event of emergency well water use the scenario requested for use in this permit would require a maximum 720 hours of operation in a single month in a year, resulting in 87.6 million gallons per month (30 days) maximum well pumping for one month a year for Unit 4. Presently, Units 1 through 3 are allowed 30 days of pumping at a maximum rate of 3,645,000 gpd (780,000 gpd potable and process water plus 2,865,000 gpd emergency cooling tower makeup) which for a month would be 109.4 million gallons. Thus, the total maximum withdrawal for Units 1 through 4 will be 197 million gallons in a 30 day month.

F.4. Water Conservation Plan

The *Water Use Permit Application* will require a *Water Conservation Plan* because the projected maximum groundwater demand for Unit 4 is 2,920,000 gallons per day (gpd), which is above the 500,000 gpd threshold requirement for the completion of a *Water Conservation Plan*. The *Water Conservation Plan* will be prepared during the detailed design phase for this project and will be submitted post-certification and prior to operation.

G. Groundwater

The use of groundwater for this project will require a *Water Use Permit Application* to be submitted to the South Florida Water Management District. The *Water Use Permit Application* requires *Table A, Description of Wells* be submitted as supporting documentation regarding the groundwater wells constructed for this project. However, the groundwater well design will be completed during the detailed design phase and will be submitted post-certification and prior to well construction.

Water for fire water, service water, evaporative cooler makeup, demineralizer makeup, and cooling tower makeup initial and emergency operation will be supplied by the Upper Floridan Aquifer. The Upper Floridan Aquifer, as defined for the project, is a confined unit. The base of the confining unit is located at approximately 500 feet to 600 feet below ground surface (bgs).

There are six existing wells on the site of Units 1, 2 and 3. Five new wells (No. 7, 8, 9, 10, and 11) will be installed into the Upper Floridan Aquifer during the construction of Unit 4 of the Cane Island Power Park. Cane Island Power Park withdrawals (including groundwater for cooling tower water) are requested as a 30 day allocation not to exceed 197 million gallons; an annual allocation not to exceed 319.8 million gallons; and a maximum daily allocation not to exceed 6.565 million gallons per day. Excluding cooling system makeup, the normal new Unit 4 daily well water requirement is estimated to be 134,000 gallons per day. The normal total Units 1 through 4 daily well water requirement is estimated to be 354,000 gallons per day when firing all units on natural gas and 914,000 gallons per day when firing Units 1 through 3 on fuel oil and Unit 4 on natural gas. The peak rate of pumping would be 6.565 million gallons per day when in emergency tower water makeup mode. Two of the existing wells (Wells No 1 and 2) with a capacity of 200 gpm each provide potable and process water. A new well with a capacity of 250 gpm will be installed such that the three wells together can provide the maximum usage of 914,000 gpd. The proposed other four new wells for Unit 4 and the existing Wells No. 3 through 6 will be used for emergency cooling only or as maintenance spares for Wells No. 1 and 2.

G.1 Environmental Impacts

The effects of groundwater withdrawals during the plant operation on drinking water supplies are discussed in Section 5.3.2 of the Site Certification Application. Based on groundwater analytic model predictive results, water withdrawal required for the CIPP operational activities will not cause harm to any sensitive areas, wetlands, or existing legal users. The CIPP groundwater wells are not located near a saline water source; therefore, saline water intrusion is not a concern.

G.2 Saline Monitoring

The CIPP groundwater wells are not located near a saline water source; therefore, saline water intrusion is not a concern and no saline water monitoring program is required.

G.3 Reclaimed Water

The use of reclaimed water from the Toho Water Authority Effluent Pipeline will be increased from the amount currently used for Units 1 through 3 to meet the needs of the entire 4 unit Cane Island Power Park. There is adequate reserve flow in the Effluent Pipeline to meet this extra need. The incremental amount of reclaimed water used by Unit 4 will be 2.786 million gallons per day. The peak amount of reclaimed water used by the four units together will be 5.919 million gallons per day. Should reclaimed water become temporarily unavailable, KUA will notify the SFWMD within 24 hours of commencing temporary withdrawals from the Upper Floridan Aquifer.

G.5 Calibration Reports

Calibration reports are provided to SFWMD for each existing well at CIPP. A copy of a calibration report from CIPP is included as Attachment H. Similar such reports will be provided for the new wells associated with Unit 4.