



Plant Washington Water Permit

Overview: Power4Georgians is committed to developing a modern coal energy facility that will meet the rigorous water quality standards of the Georgia Environmental Protection Division (EPD) and the federal Clean Water Act.

Although water management standards in Plant Washington's draft permit, issued in August 2009, represent processes that are acceptable under the strictest guidelines of the U.S. Environmental Protection Agency, Power4Georgians continued looking at methods to implement advanced water management strategies. To address suggestions made by citizens, and under direction of the EPD, Power4Georgians was able to devise a water management strategy that goes beyond what is required by regulation.

National Pollutant Discharge Elimination System (NPDES) permit: Plant Washington will be permitted to draw water from the Oconee River and to return non-contact cooling tower blowdown to the river. The draft permit covered the discharge of stormwater from retention basins located on the site. During the permitting process, Power4Georgians made extensive enhancements to the way water will be managed at the plant.

- The most significant change was to convert the stormwater runoff retention basins to stormwater collection and storage basins, thus allowing this water to be reused at the plant. This accomplished two key objectives: the elimination of the discharge of stormwater from the basins, and the collection and reuse of stormwater to supplement the river water and groundwater used by the plant.
- To protect groundwater, all stormwater storage basins will be lined with low permeability materials or plastic. In addition, the coal storage facilities and other areas of the plant site that may produce contact stormwater will either be paved or lined with a low permeability material or plastic; stormwater ditches also will be lined.
- The size of the stormwater retention basins was increased to hold up to a 500-year, 24-hour storm event. As an added precaution, an emergency overflow storage basin will also be constructed to contain any contact stormwater runoff in excess of the 500-year, 24-hour storm event.

Maximum Environmental Protection: Plant Washington will be constructed with a solid materials handling facility to store ash and gypsum. Unlike many power plants, the ash and gypsum will be stored in a dry form instead of being discharged into an ash pond. **There will be no ash ponds at Plant Washington.**

- The gypsum will be generated by the emissions control equipment as a slurry which will be dewatered to convert the gypsum into a dry form suitable for storage and future reuse. The water from the gypsum system will be recycled to the emissions control process to eliminate discharge of these liquids.
- Fly ash generated by the power plant will be collected in a dry form. This ash will have small quantities of moisture added to control dust. Wet bottom ash will be dewatered before disposal.
- Ash and gypsum will be stored at the solid materials handling facility in fully lined cells. As cells are filled, they will be covered with a low permeability material. Runoff from this cover will be collected in non-contact stormwater storage basins engineered to contain up to a 500-year, 24-hour storm event.
- The clean water in these basins will be returned to the raw water storage basin to be used as makeup water to the cooling tower system which will reduce the amount of fresh water needed by the plant.
- To further protect the Oconee and Ogeechee River Basins, contact stormwater from the solid materials handling facility, the coal storage piles and other on-site locations will be collected in lined stormwater ditches and stored in lined stormwater storage basins.
- Any contact stormwater in excess of a 500-year, 24-hour storm event will be discharged to an on-site, lined emergency storage basin. This water will be pumped to the plant and will be consumed in the emissions control process.

Using the stormwater as makeup water for this plant eliminates its discharge to the Ogeechee River Basin.

- The improvements to the design of the stormwater system will allow stormwater to be reused at the plant. This water collection and reuse system conserves the valuable river and groundwater resources in Washington County and will be one of the most advanced of any power plant in the Southeastern United States.
- The design of Plant Washington goes a long way toward accomplishing one of the ultimate goals of the Clean Water Act--zero discharge of pollutants. The only water that will be discharged from the plant is the non-contact cooling tower blowdown, which is essentially river water (and/or well water) and rainwater, which has a somewhat higher mineral content due to evaporation in the cooling tower.
- Cooling water additives used to reduce scaling and corrosion are considered non-harmful and have been shown to have no toxicity to fish or humans at concentrations many times higher than what would be present in the cooling tower blowdown.

Surface and Groundwater Supply Permits: Plant Washington will use an integrated approach that relies on groundwater, Oconee River water and onsite stored water to provide a sustainable water supply. The primary water supply will be the Oconee River. Water conservation measures in the plant, including zero discharge of process water and capture and use of stormwater collected onsite, make Plant Washington one of the most water-efficient power plants in the Southeastern United States.

- Plant Washington has been designed with a closed cycle, recirculating cooling tower system to reduce the amount of water used. In contrast, a power plant with once-through cooling (which is typical for most of the power plants in Georgia) may withdraw more than 20 times as much water.
- On the average 13.5 million gallons per day (MGD) will be required by the plant with a peak demand of 16 MGD for cooling and process water.
- About 0.1 MGD of groundwater will supply the plant's ultra-pure water system to feed the supercritical power boiler. This system will operate whenever the plant is in operation.
- The annual average flow in the Oconee River is over 1,900 MGD which provides a more than adequate supply during most years.
- During low river flow conditions, as defined in the permit, withdrawal from the Oconee River would stop and the plant would be supplied from the onsite raw water storage basin. Once the onsite storage basin is depleted, water supply will switch to a network of 14 groundwater supply wells located across Washington County. Supply from these wells would be used for operation of the plant and for refilling the on-site storage basin. At no time would these production wells and the Oconee River water supply be operated at the same time.
- The location and production rates of the 14 groundwater supply wells were established using a highly sophisticated groundwater computer model to evaluate locations, pumping depths and pumping capacity of the wells to avoid adverse impacts on area water supply wells and local surface waters. The extensive computer modeling shows that the use of groundwater as a backup water supply to the Oconee River will not deplete the region's groundwater.
- During operation of Plant Washington, the groundwater computer model will be updated with current data to assess effects on area groundwater. The groundwater supply model developed by Power4Georgians in collaboration with EPD is the most sophisticated groundwater model ever used in Georgia.

For more information about Plant Washington, visit: www.Power4Georgians.com

For more information about the Plant Washington Permits, visit:
<http://www.georgiaair.org/airpermit/html/permits/psd/dockets/plantwashington/index.htm>