

Georgia Department of Natural Resources

Environmental Protection Division, Watershed Protection Branch
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March 2, 2011

Public hearing participants and
Persons who commented on
Surface Water Withdrawal Permit # 150-0391-04
and/or NPDES Permit No. GA0039055

Re: Power4Georgians (Plant Washington)
Mayview Road, Sandersville, Washington County

Dear Participant/Commenter:

Thank you for your comments concerning the proposed Plant Washington coal fired power plant.

After performing a detailed technical review of the draft NPDES Permit and draft Surface Water Withdrawal Permit, the Environmental Protection Division (EPD) has determined that the proposed permits meet all necessary requirements and are protective of the environment. Therefore, EPD has issued the permits. This determination was made after careful consideration of all the comments pertaining to these two permits received by EPD during the public hearing and during the comment period.

We have included an attachment, which addresses the issues that related to the two draft permits presented during the hearing and public notice comment period, and EPD's responses to those issues. Your interest in this matter and your continued support for Georgia's environmental programs is appreciated.

Sincerely,



Clay Burdette, Program Manager
Water Withdrawal Permitting Program



Jane Hendricks, Program Manager
Wastewater Regulatory Program

Attachment

Power4Georgians (Plant Washington)
Responses to Public Hearing and Written Comments

Watershed Protection Branch
Water Withdrawal Permitting Program
Surface Water Withdrawal Permit No. 150-0391-04
Wastewater Regulatory Program
NPDES Permit No. GA0039055

Surface Water Withdrawal Permit Responses

1. Comment:

Some comments questioned whether the Oconee River could support the proposed Plant Washington withdrawal. Some comments implied that the Oconee River is a stressed resource and an unreliable water supply. The water withdrawal permit would allow the coal plant to transfer massive amounts of water from the Oconee River to be consumed at the plant in the Ogeechee Basin.

Response:

The average annual flow of the Oconee River at the proposed Plant Washington site is approximately 3,000 cubic feet per second (cfs). The proposed Plant Washington surface water withdrawal is 16.0 million gallons per day (mgd) (24.8 cfs) (24-hour maximum day), 13.5 mgd (20.9 cfs) (monthly average) from the Oconee River. The surface water withdrawals are less than one percent of the average annual flow in the Oconee River. This small fraction would not preclude future downstream withdrawals.

During times when the Oconee River experiences low flow conditions, the Plant Washington's surface water withdrawals would cease and be replaced by groundwater. The Surface Water Permit establishes a monthly low flow quantity that indicates when the surface water withdrawals would cease. These monthly low flow quantities protect the instream flow requirements and downstream permits. In addition, Plant Washington will continuously discharge non-contact cooling water to the Oconee River which will, during dry periods, increase the amount of water available to downstream users. The average discharge will be approximately 1.55 mgd (2.4 cfs).

2. Comment:

The permit allows Plant Washington to use up to 16 million gallons of water per day from the Oconee River and return as little as 11% of the water back to the Oconee River. This could have serious impacts on downstream users.

Response:

There is a consumptive loss of water for a power plant that uses cooling towers. This proposed project has incorporated water conservation measures, including using a closed cycle cooling tower system, recycling industrial process water, reusing stormwater from the plant site, and reclaiming wastewater. The proposed power plant uses current

technology for cooling towers and the consumptive loss of water is accepted as reasonable.

The monthly low flow quantities provide protection for the existing and reasonable future downstream water needs. Also, the Oconee River streamflows have been addressed in the response to comment one above.

3. Comment:

The withdrawal permit would also allow constant pumping of up to 16 million gallons of groundwater from wells in the Ogeechee Basin. What little water is not consumed in producing electricity would be discharged to the Oconee River and no longer available for farmers, homeowners, and recreation in the Ogeechee River basin.

Response:

Groundwater concerns were handled through the Permit to Use Groundwater 150-0026. The short-term use of groundwater wells would only occur during a drought period when withdrawals of surface water from the Oconee River would cease. During such periods, groundwater will be pumped from wells located in both the Oconee and Ogeechee River basins. It should be noted that the aquifers that underlie Georgia do not have the same configuration as surface water basins and the degree of interconnection between surface water and groundwater varies substantially with location. It cannot be assumed that water pumped from an aquifer underlying a river basin would necessarily otherwise become available to surface water users within that river basin.

4. Comment:

The EPD should not be in the business of compromising downstream economic opportunity including recreation, agriculture, municipal water supplies, and other businesses in the Oconee River basin for the convenience of a private entity in the Ogeechee River basin. Economic growth and industry should be directed to where there is a larger water supply.

Response:

The Oconee River basin upstream of the proposed Plant Washington withdrawal is utilized for water supply withdrawals, wastewater returns and other uses. However, these upstream current and future uses of the Oconee River basin will not be impacted by the proposed Plant Washington withdrawal due to the effect of the two lakes (Lake Oconee and Sinclair Lake) just upstream of the proposed withdrawal.

Water needs and availability in the Oconee basin have been evaluated as part of regional water planning under the State Water Plan, and current uses are not now compromised. For the downstream portion of the basin relevant here, the Upper Oconee Regional Water Planning Council's forecasts of off-stream water demands through 2050 indicate a moderate increase in demand. Records for long-term, observed flows in the Oconee River indicate that there is sufficient flow in the river to meet that forecasted demand. Withdrawal permit conditions ensure that the proposed withdrawal activity will not adversely affect water quality. This use of water envisioned under the proposed Plant

Washington withdrawal permit will therefore not compromise present or foreseeable withdrawals or wastewater returns.

5. Comment:

Some comments expressed concerns that local wells will be harmed by possible aquifer draw-down as a result of the proposed plant.

Response:

Groundwater concerns were handled through the Permit to Use Groundwater 150-0026. The short-term use of groundwater wells would only occur during a drought period when withdrawals of surface water from the Oconee River would cease. The proposed groundwater withdrawals for Plant Washington were modeled using a site-specific transient numerical model that was carefully calibrated and subsequently used to simulate intermittent groundwater withdrawals for cooling water. The Plant Washington modeling indicated that transient short-term groundwater withdrawals, as authorized by the groundwater withdrawal permit, would have no lasting effects on water levels in the Cretaceous aquifer, or on the overlying water table that is hydraulically connected to surface waters.

6. Comment:

The EPD must consider downstream agricultural users and adjust the Withdrawal Permit's non-depletable flow calculations to ensure sufficient flow for these downstream users.

Response:

The downstream Farm permits were considered. These permitted withdrawals can pump water at anytime, while Plant Washington's surface water flows would cease when river flows fall below specific thresholds. Because the plant will only pump surface water at higher flows, the permit would not cause any probable impacts to the ability to withdraw water under downstream Farm permits. Also, the Oconee River streamflows have been addressed in the response to comment one above.

7. Comment:

The EPD must consider future users and allocate flow for these users in its determination of the Withdrawal Permit's non-depletable flow.

Response:

Future water uses were considered. Forecasts of future demand on a water source, based in part on current withdrawals, are fully considered in both the permit review process and the State Water Planning process. Future water demand forecasts were considered in the issuance of the withdrawal permit.

8. Comment:

The EPD has failed to fulfill the Georgia Water Quality Control Act's requirement that it give "due consideration to competing existing uses and applications for permits which

would not involve interbasin transfers of surface water” and that EPD “shall endeavor to allocate a reasonable supply of surface waters to such users and applicants.”

Response:

EPD considered the existing users and there are currently no applications for farm or non-farm withdrawals on the Oconee River downstream from Plant Washington to the Dublin area. Also, see response to comment six and seven above.

9. Comment:

The EPD has failed to consider the criteria for interbasin transfers required by the Georgia Comprehensive State-wide Water Management Plan (Plan). EPD may not lawfully issue the Withdrawal Permit without fulfilling the interbasin transfer requirements of Section 12-5-31(n) and the Plan.

Response:

At the time of permit issuance, the Plant Washington permit meets the interbasin transfer requirements under O.C.G.A. § 12-5-31(n) and the Rules for Surface Water Withdrawal (391-3-6-.07).

Power 4 Georgians (Plant Washington)
NPDES Permit No. GA0039055
Public Comment Response

1. Comment:

The water discharge permit fails to protect the Oconee River from toxic pollutants like mercury, arsenic, lead and barium.

Response:

The discharge from the plant is limited solely to cooling tower blowdown. No wastewater associated with coal handling or the ash handling system can be discharged under this permit. The permittee is also required to certify annually that chemicals added for cooling tower maintenance do not result in the discharge of priority pollutants, other than chromium or zinc, above detectable limits.

An analysis of the expected level of pollutants, as presented in the Permit Application Form 2D, was conducted to predict compliance with numeric water quality standards. No potential violations were noted. The facility, within 2 years of commencing discharge, will be required to submit analytical results for all applicable conventional pollutants, and other pollutants such as, metals, cyanide, total phenols, and GC/MS organic pollutants. At that time, a review of the reasonable potential analysis will be performed and any appropriate water quality based effluent limitations and/or monitoring will be imposed. The two year period allows sufficient analyses to be conducted to properly evaluate the need for additional effluent limitations.

2. Comment:

The permit fails to require any stormwater runoff monitoring, potentially allowing contaminated rain water from areas of this facility to wash into the Ogeechee River.

Response:

As described in the Addendum to Plant Washington Water Management Plan and NPDES Permit Application (rev. Mar. 22, 2010), all stormwater from the coal storage area, power block and limestone storage area and disturbed areas of the solids materials handling facility (ash storage and gypsum storage areas) will be collected and retained in stormwater storage basins designed to contain the stormwater runoff volumes associated with a 500 year, 24 hour storm event. Any stormwater runoff in excess of the 500 year, 24 hour storm event will also be collected in an emergency overflow basin. All stormwater collected in these basins will be used on site. The permit does not allow stormwater from these areas to be discharged to the Ogeechee River.

3. Comment:

The permit does not contain the specific temperature limits on Page 2 and the monitoring for temperature in the permit is inadequate.

Response:

The applicant is proposing to install cooling towers, which is considered Best Available Technology for this type of discharge. The use of cooling towers significantly reduces any thermal impacts to the river. In response to comments received, a small mixing zone has been established in the permit based upon CORMIX modeling. The permit requires the facility to monitor above and below this mixing zone, on a monthly basis, to demonstrate compliance with the State's water quality standard for temperature. A requirement has been added to the permit to conduct weekly temperature monitoring during the critical months derived from the CORMIX model (January and August). In addition, the facility is required to conduct continuous temperature monitoring of Outfall 01 and a requirement has been added to the permit to conduct continuous monitoring on the river intake temperature (that is, the point of water withdrawal, which is upstream of the discharge point). The permit has been revised to include all applicable limits in the tables on pages 2 and 3 (temperature, total chromium and total zinc).

4. Comment:

The limit for chlorine on Outfall 01 is too high.

Response:

The permit limit for free available chlorine (FAC) of 0.2 mg/l is protective of water quality standards. Based upon a Reasonable Potential Analysis, at maximum plant flow (3.8 mgd) and lowest daily river flow (243 cfs/157 mgd), the predicted chlorine concentration in the Oconee River is well below the instream water quality standard. The predicted concentration is well below both the acute and chronic levels in EPA's "Ambient Water Quality Criteria for Chlorine."

5. Comment:

The draft permit fails to comply with Georgia's Anti-Degradation Policy. The permit allows for degradation of the receiving water to the extent that it allows the discharge of pollution, and also provides for a mixing zone in which water quality standards will be exceeded. This lowering of the water quality must be supported by a socioeconomic analysis.

Response:

The inclusion of a mixing zone does not indicate that water quality will be degraded to any significant degree. A mixing zone is allowable under applicable water quality regulations and this mixing zone meets regulatory requirements for such zones. EPD has determined that the discharge will not degrade or lower water quality below levels necessary to protect existing uses fully.

More generally, EPD has concluded that there is no reasonable potential and thus no expectation for the discharge to jeopardize any existing use, to cause or contribute to a violation of any applicable instream water quality standard, or otherwise to have a significant impact on the water quality of the Oconee River. This conclusion is based on the nature of the discharge (non-contact cooling tower blowdown), the large dilution factor in the receiving stream, and a Reasonable Potential analysis of the expected level of pollutants in the discharge.

EPD has found that allowing lower water quality is necessary to accommodate important economic and social development in the area in which the waters are located. For example, the permitted plant will provide significant temporary and permanent employment opportunities, which in turn provide important economic and social development in the area. This conclusion is supported by the antidegradation Report, which shows that the no-discharge alternative is not feasible. It is also supported by the measures that have been taken to minimize the impact of the discharge to the receiving water, such as the use of an equalization basin and a reducing orifice at the point of discharge to insure rapid mixing. The applicant considered installing a multiport diffuser but rejected this alternative for several reasons including the fact that it would require obstructing a portion of the river channel. Finally, EPD has applied the highest applicable statutory and regulatory requirements for this and other discharges. The draft permit fully complies with Georgia's antidegradation rule.

6. Comment:

The mineral content becomes too high in the cooling tower and has to be discharged. Is it safe to discharge this water? What effect will the intake and discharge have on the spawning area for the Robust Redhorse?

Response:

The mineral contents of this discharge will have minimal impacts to water quality in the Oconee River. The permit requires that a full priority pollutant analysis, including heavy

metals, be conducted. EPD will review the priority pollutant results and then determine if the permit needs to be modified to include additional monitoring requirements and/or numeric effluent limits.

Throughout the permitting process, EPD and the permittee have addressed concerns raised regarding various aquatic species and their breeding habits, including the Robust Redhorse. Various project improvements were made in response to public comments and input from the Georgia Wildlife Resources Division regarding potential effects to aquatic species. The intake is located approximately 0.6 miles upstream from the Robust Redhorse spawning area, and the cooling tower blowdown discharge is located over two miles downstream from the Robust Redhorse spawning area.