

**Georgia Department of Natural Resources**

**Environmental Protection Division**

2 Martin Luther King Jr. Drive, Suite 1456, Atlanta, Georgia 30334

Judson H. Turner, Director

(404) 656-4713

September 23, 2015

Public hearing participants and  
persons who commented on  
Draft NPDES Permit No. GA0039420

RE: EPD Response to Comments  
Plant Vogtle, Units 3 and 4  
NPDES Permit No. GA0039420  
Waynesboro, Burke County

Dear Participant/Commenter:

Thank you for your comments concerning the application submitted by Plant Vogtle, Units 3 and 4 for the issuance of their NPDES permit. The Environmental Protection Division (EPD) has made changes to the permit based on comments received during the public hearing and public comment period for the draft NPDES permit.

Based on those comments, EPD has made some modifications to the draft permit and a list of changes to the permit can be found in the attached fact sheet addendum along with an attachment, which addresses the issues presented during the public hearing and public notice comment period with EPD's responses to the issues raised.

EPD has determined that the permit meets all the necessary requirements and are protective of the environment. Therefore, EPD has issued the permit.

We appreciate your interest in this matter and your continuing support for Georgia's environmental programs.

Sincerely,



Jeffrey Larson, Manager  
Wastewater Regulatory Program  
Watershed Protection Branch

JH/ahd

Attachment (EPD Response to Comments & Fact Sheet Addendum)

**Public Comments and EPPD Responses on NPDES Permit  
Southern Nuclear Plant Vogtle – GA0039420**

| COMMENTS RECEIVED   | EPPD RESPONSE   |
|---|---|
| <p><b><u>Thermal Impacts</u></b></p> <p>The discharge of hot water will reduce the available Dissolved Oxygen (DO) and can negatively affect wildlife in the river.</p>   | <p>Based upon the results of Cornix modeling, the thermal impacts associated with this discharge will result in a relatively small thermal mixing zone in the immediate vicinity of the discharge pipe, as referenced in the fact sheet. The mixing zone represents less than 10% of the total river width.</p>   |
| <p><b><u>Power Generation Capacity is Unnecessary</u></b></p> <p>The expansion at Plant Vogtle is not necessary for the company to meet power demands. Georgia Power's recent data show decreases in sales, growth, and capacity utilization.</p> | <p>The Georgia Public Service Commission approved the need and cost effectiveness of the project by granting approval to implement the expansion in March 2009. Determining the need for increased power demand is beyond the scope of EPPD's regulatory jurisdiction.</p>  |
| <p><b><u>Consumptive Loss</u></b></p> <p>The consumptive loss of water through Plant Vogtle's cooling system can be problematic for the River, particularly during periods of low flow.</p>   | <p>The worst-case scenario of consumptive loss is estimated at 67 cfs based on the maximum permitted withdrawal rate of 74 MGD. This represents ~2% of the minimum low flow in the Savannah River (~3100 MGD) used in the River Model. The actual consumptive loss will likely be well below this level most of the time. Impacts of the consumptive loss are addressed in the water withdrawal permit (permit number 017-0191-11) by requiring the permittee to install and operate a DO injection system.</p> |

**Public Comments and EPD Responses on NPDES Permit  
Southern Nuclear Plant Vogtle – GA0039420**

| COMMENTS RECEIVED   | EPD RESPONSE  |
|---|---|
| <p><b><u>Reasonable Potential Analysis</u></b></p> <p>EPD should conduct a reasonable potential analysis to determine whether the discharge will cause or contribute to DO violations in the harbor.</p>                                      | <p>EPD did conduct a reasonable potential analysis for DO. The discharge from Plant Vogtle does not impact DO levels in the Harbor due to the insignificant oxygen demanding constituents discharged into the receiving water. The Savannah River Model (GA RIV-1) predicts a small DO decrease and small temperature increase at the Plant Vogtle site, but both return to ambient DO and temperature by the time the flow reaches the downstream Clyo USGS gage, however the flow is reduced by 67 cfs due to consumptive loss (see response to Consumptive Loss).</p> <p>EPD, EPA and South Carolina DHEC are in the process of drafting the Savannah Harbor DO TMDL or 5R Plan to address DO concerns in the Savannah Harbor. The draft Savannah Harbor DO TMDL or 5R Plan is not applicable to this discharge.</p> |
| <p>The discharge should be evaluated on EPD’s draft 2014 Integrated 305(b)/(303)d List for a potential listing of trophic-weighted residue (TWR) and EPD should address any potential impacts for TWR levels downstream of the discharge.</p> | <p>EPD evaluated the approved 2012 Integrated 305(b)/(303)d List when drafting this permit, which was approved by EPA on May 31, 2013. EPD also reviewed the unapproved 2014 Integrated 305(b)/(303)d List. The approved 2012 and unapproved 2014 Integrated 305(b)/(303)d List does not list the permittees receiving waters at its discharge location, nor in the immediate vicinity of the discharge location, as “not-supporting its designated” use for TWR.</p>   |

**Public Comments and EPD Responses on NPDES Permit  
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| <b>COMMENTS RECEIVED</b>   | <b>EPD RESPONSE</b>  |
|--|--|
| <p><b><u>Defer NPDES Permit Issuance</u></b></p> <p>The Savannah Harbor DO TMDL or 5R should be finalized prior to issuing the NPDES permit.</p>   | <p>As stated above, the draft Savannah River TMDL is not applicable to this discharge due to the insignificant amount of oxygen demanding constituents discharged into the receiving waters.</p>   |
| <p>The State of South Carolina has challenged the Plant Vogtle water withdrawal permit. EPD should await the resolution of this challenge before issuing the NPDES permit.</p>           | <p>The State of South Carolina withdrew their appeal to the water withdrawal permit and it was issued by EPD on December 5, 2014.</p>  |
| <p><b><u>Best Available Technology</u></b></p> <p>EPD should utilize Best Professional Judgement (BPJ) to determine whether a zero liquid discharge (ZLD) system should be required.</p> | <p>A ZLD system is typically employed at sites with extremely limited surface and/ or ground water supplies or where a discharge would not support water quality in the receiving body. EPD encourages the return of treated effluent to waters of the State that do not have the potential to impact or violate a WQS. Based upon EPD's reasonable potential evaluation and CORMIX modeling, a ZLD for this facility is not an economically appropriate technology to employ.</p> |

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| <b>COMMENTS RECEIVED</b>   | <b>EPD RESPONSE</b>   |
|--|---|
| <p><b><u>Effluent Limitations and Monitoring</u></b></p> <p>The permit should include mass based effluent limitations and monitoring at the final outfall.</p>               | <p>As stated in the fact sheet, a best professional judgment has been made in accordance with 40 CFR Part 423.15(m), specifying that concentration-based as opposed to mass-based effluent limitations will be used in this permit, consistent with previously issued NPDES permits for power plants in Georgia. Concentration-based effluent limits are representative and a conservative method to ensure compliance with the technology based effluent limits at the source, the internal waste streams prior to the contribution of large amounts of cooling water.</p> |
| <p>The permit should include specific provisions requiring the facility to comply with any and all radioactive effluent limits set by the Nuclear Regulatory Commission.</p> | <p>The Nuclear Regulatory Commission (NRC) has primacy of the radioactive components in the wastewater. Radioactive components of the discharge are treated, monitored and regulated in accordance with NRC regulations prior to release.</p>   |
| <p>Monitoring frequencies should be increased.</p>   | <p>The submitted permit application and supporting documents indicate that the facility is designed to discharge a consistent effluent characterization profile; hence the frequency of monitoring is adequate. EPD may re-evaluate the monitoring frequency upon the start-up and actual effluent discharge of both Units 3 and 4. If EPD finds that additional monitoring is necessary, EPD may modify the permit. Additionally, the monitoring frequencies are consistent with other NPDES permits for power generation facilities.</p>                                  |

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| <b>COMMENTS RECEIVED</b>  | <b>EPD RESPONSE</b>  |
|---|--|
| <p>The pH limit should be changed to a range of 6.0 – 8.5.</p>  | <p>Georgia’s Rules and Regulations for Water Quality Control specify an instream pH limit of 6.0 – 8.5 for waters with a designated use of Fishing. However, the effluent only makes up a small percentage of the river and therefore lowering the effluent discharge pH limit is not necessary. Our Waste load allocation policy regarding pH is if the instream waste concentration (IWC) is &gt;50% then the permit limit is 6.0-8.5 (s.u.), otherwise it is 6.0-9.0.</p> |
| <p>Require whole effluent toxicity testing at the discharge for Outfall 1</p>   | <p>Based upon the review of the submitted application and supporting documentation, in accordance with EPD’s Reasonable Potential Analysis, no information was submitted to support a requirement for whole effluent toxicity testing.</p>   |
| <p>Explain Best Management Practices</p>  | <p>Part II.B.13 of the permit addresses best management practices as “...activities include, but are not limited to: materials storage, in-plant transfer, process and material handling, loading and unloading operations, site runoff management, and sludge and waste disposal.</p>   |
| <p>EPD needs to conduct further analysis about the surface and ground water dynamic in this part of the State and reinstate a robust radiological environmental monitoring program.</p> | <p>EPD evaluated all the currently available data at the time the permit application was submitted.</p>  |

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| <b>COMMENTS RECEIVED</b>  | <b>EPD RESPONSE</b>   |
|---|---|
| <p><b><u>Drought Management</u></b></p> <p>The permit should include a Drought Management Plan.</p> | <p>Southern Nuclear’s Water Withdrawal’s Permit, Special Condition Numbers 6 and 7 require the permittee to abide by applicable water conservation and applicable drought response requirements, respectively. To require additional drought response measures in this NPDES permit would be duplicative.</p> |

# Fact Sheet -Addendum

**Southern Nuclear Operating Company  
Plant Vogtle, Units 3 and 4  
NPDES Permit No. GA0039420  
September 2, 2015**

**APPLICATION FOR REISSUANCE OF A NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TREATED  
WASTEWATER INTO WATERS OF THE STATE OF GEORGIA**

Were there any revisions between the draft and final permit? If yes, please specify:

Yes, Revisions were made. Please see below     No Revision

- Page 1, cover page of the permit, the word “compliance” was revised to “accordance.”
- Page 1, cover page of the permit, the word “authorized” was revised to “issued.”
- Page 8, Part 1.B.2 - the following language was revised to allow for electronic reporting as follows:

2. Reporting

- a. Monitoring results obtained during the calendar month shall be summarized for each month and reported on the Discharge Monitoring Report (DMR). The results of each sampling event shall be reported on the Operating Monitoring Report (OMR) and submitted as an attachment to the DMR. The DMR and OMR and any other required forms, reports and/or information shall be completed, signed and certified by a principal executive officer or ranking elected official, or by a duly authorized representative of that person who has the authority to act for or on behalf of that person, and submitted to EPD, postmarked no later than the 15th day of the month following the reporting period.
- b. Signed copies of these and all other reports required herein, unless otherwise stated, shall be submitted to the EPD Office listed on the permit issuance letter signed by the Director of EPD.
- c. All instances of noncompliance not reported under Part I.B. and Part II. A. shall be reported at the time the operation monitoring report is submitted.
- d. Unless otherwise specified in this permit, quarterly samples shall be taken during the periods January-March, April-June, July-September, and October-December. Semiannual samples shall be taken during the periods January-June and July-December. Results from these samples



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shall be reported to the EPD on the monitoring report for the last month of the period. Results of annual samples will be reported on the June monitoring report.

- Page 11, Part II.A.1- the following section was revised to clarify the Change in Discharge language as follows:

1. Notification of Change

- a. The permittee shall provide EPD at least 90 days advance notice of any planned physical alterations or additions to the permitted facility that meet the following criteria:
  1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b);
  2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1); or
  3. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. The permittee shall give at least 90 days advance notice to EPD of any planned changes to the permitted facility or activity which may result in noncompliance with permit requirements.
- c. Following the notice in paragraph a. or b. of this condition the permit may be modified. The permittee shall not make any changes, or conduct any activities, requiring notification in paragraph a. or b. of this condition without approval from EPD.
- d. The permittee shall provide at least 30 days advance notice to EPD of:
  1. any planned expansion or increase in production capacity; or
  2. any planned installation of new equipment or modification of existing processes that could increase the quantity of pollutants discharged or result in the discharge of pollutants that were not being discharged prior to the planned change.

if such change was not identified in the permit application(s) upon which this permit is based and for which notice was not submitted under paragraphs a. or b. of this condition.

- e. All existing manufacturing, commercial, mining, and silvicultural dischargers shall notify EPD as soon as it is known or there is reason to believe that any

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activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant not limited in the permit, if that discharge will exceed (i) 100 µg/L, (ii) five times the maximum concentration reported for that pollutant in the permit application, or (iii) 200 µg/L for acrolein and acrylonitrile, 500 µg/L for 2,4 dinitrophenol and for 2-methyl-4-6-dinitrophenol, or 1 mg/L antimony.

- f. All existing manufacturing, commercial, mining, and silvicultural dischargers shall notify EPD as soon as it is known or there is reason to believe that any activity has occurred or will occur which would result in any discharge on a nonroutine or infrequent basis, of any toxic pollutant not limited in the permit, if that discharge will exceed (i) 500 µg/L, (ii) ten times the maximum concentration reported for that pollutant in the permit application, or (iii) 1 mg/L antimony.
- g. Upon the effective date of this permit, the permittee shall submit to EPD an annual certification in June of each year certifying whether or not there has been any change in processes or wastewater characteristics as described in the submitted NPDES permit application that required notification in paragraph a., b., or d. of this condition. The permittee shall also certify annually in June whether the facility has received offsite wastes or wastewater and detail any such occurrences.

- Page 18, Part III.A.4 - the following language was revised to clarify specific discharge locations:

- 4. The quantity of pollutants discharged in chemical metal cleaning waste shall not exceed the quality determined by multiplying the flow of metal cleaning wastes times the concentrations listed below. All effluent characteristics shall be monitored once (1) per week by grab sampling when a discharge is occurring from outfall Nos. 4 and 5, when applicable. The results shall be reported in accordance with the reporting requirements in Part 1.B.2 of this permit once (1) per month.

- Page 19, Part III.A.13 - the Special Condition was added requiring the permittee to perform a temperature study.

- 13. The permittee shall perform an instream temperature study in the vicinity of outfall number 001 to demonstrate the results of the CORMIX mixing zone model within the first two years of the commercial operation of Vogtle Unit 4 and while all four units (Vogtle Units 1-4) are operational. The study shall be conducted during the critical periods of the year, the summer months (August – October)

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during low flow for the 90<sup>0</sup> F maximum water quality standard and for the winter months (December – February) for the delta T water quality standard.

- a. Prior to performing the temperature study, the permittee shall submit the proposed temperature study plan to EPD for review and approval. The study, at a minimum, shall include plans to monitor and report effluent temperature and instream monitoring locations at several transects within the receiving water.
- b. If the field conditions do not exist within the first two years as referenced above (for example, low flows do not exist, the winter months are abnormally warm or other weather and/or field conditions prevent the permittee from performing the temperature study within the referenced timeframe) the permittee may submit a written request to EPD for an extension from the two year deadline referenced above. EPD may review the request and make a determination based on the provided documentation ensuring the temperature study is performed during a representative time period to validate the results of the CORMIX mixing zone modeling.
- c. Based on the submitted information provided from the temperature study, EPD may evaluate the data and determine if additional information is required, modify the permit or concur with the results of the temperature study.