

DOCKET NO. D-1987-026 CP-4

DELAWARE RIVER BASIN COMMISSION

NRG REMA LLC

**Titus Generating Station Process Water Discharge
Cumru Township, Berks County, Pennsylvania**

PROCEEDINGS

This docket is issued in response to an Application submitted to the Delaware River Basin Commission (DRBC or Commission) by NRG REMA LLC (docket holder) on September 29, 2014 (Application), for renewal of the docket holder's discharge associated with the Titus Generating Station (TGS). The Pennsylvania Department of Environmental Protection (PADEP) issued National Pollutant Discharge Elimination System (NPDES) Permit No. PA0010782 for this project on February 23, 2016.

The Application was reviewed for addition of the project in the Comprehensive Plan and approval under Section 3.8 of the *Delaware River Basin Compact (Compact)*. The Berks County Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on May 11, 2016.

A. DESCRIPTION

1. Purpose. The purpose of this docket is to renew approval of the docket holder's existing industrial process water discharge associated with the TGS, and to update the docket approval to reflect modifications to the facility operations associated with the closing of the TGS coal-fired generating units. This docket also continues the approval of a total dissolved solids (TDS) determination consisting of an average monthly concentration effluent limit of 3,500 mg/l for existing Outfall 004, which continues to intermittently discharge coal-ash leachate from the Beagle Club Ash Disposal (BCAD) site.

2. Location. The TGS, also referred to as the Titus Power Plant, is located a half mile west of the intersection of State Routes 422 and 176 in Cumru Township, Berks County, Pennsylvania. The docket holder owns property on both sides of the Schuylkill River in Cumru Township about two (2) miles south of Reading, Pennsylvania. Outfalls 001 and 002 previously discharged process water associated with the former coal-fired generating units. Currently, Outfall 001 discharges roof drain stormwater only and Outfall 002 has been decommissioned. The remaining power generating units are air-cooled and do not require process water. Coal ash

waste from the former coal-fired generating units is no longer placed on the BCAD site located on the east side of the Schuylkill River. However, the BCAD site continues to discharge leachate collected in the BCAD site sedimentation basins via Outfall 004, which is located at River Mile 92.47 - 71.3 (Delaware River – Schuylkill River).

The remaining active TGS process water outfall is located in the Schuylkill River Watershed as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
004 (BCAD leachate)	40° 18' 23"	75° 54' 22"

The TGS also contains ten stormwater outfalls, all located on the west bank of the Schuylkill River, referred to as Outfalls 001, 005, 006, 007, 008, 009, 010, 011, 012, and 013

3. Area Served. The discharge is associated with the TGS operations in Cumru Township, Berks County, Pennsylvania.

For the purpose of defining the Area Served, Section B (Type of Discharge) and D (Service Area) of the docket holder's Application are incorporated herein by reference, to the extent consistent with all other conditions contained in the DECISION Section of this docket.

4. Physical Features.

a. Design Criteria. On the west side of the Schuylkill River, the TGS formerly featured three (3) coal-fired generating units with a total rated capacity of 225 megawatts (MW) in addition to other remaining generating units and systems, a 3.2 mgd industrial wastewater treatment plant (IWTP), and a 3,000 gallon per day (gpd) wastewater treatment plant (WWTP) that served its sanitary needs. The coal-fired generating units, the IWTP, and the WWTP have been taken offline and decommissioned. The TGS currently features two (2) diesel-fueled combustion turbines that operate at times of peak need, and have an estimated capacity of 31 MWs. The units are air-cooled and therefore require no water for cooling. On the east side of the Schuylkill River, the TGS includes the BCAD site, which consists of a 13.4-acre coal ash disposal area and two (2) synthetically-lined basins that collect leachate and stormwater runoff from the ash disposal area.

b. Facilities. The IWTP formerly treated industrial process wastewater flows from the TGS power generating facilities and discharged to two (2) sedimentation basins, which discharged to the Schuylkill River via Outfall No. 002. The IWTP has been decommissioned and Outfall 002 has been taken offline. Other TGS facilities that are no longer in operation include the cooling tower, the surface water intake for the cooling tower make-up, intake screen back wash discharge, the 3,000-gpd WWTP. Outfall No. 001 will remain active, but will discharge roof drain stormwater and no longer discharge process water.

The Beagle Coal Ash Disposal (BCAD) site is located on the east side of the Schuylkill River. The BCAD formerly accepted waste coal ash generated during the coal-fired energy generating operations at the TGS, which have been discontinued. The BCAD consists of

the ash disposal area and two (2) synthetically-lined runoff collection ponds. Rainfall that falls on the BCAD ash disposal site flows overland is directed to an approximately 1,930,000-gallon lined pond (referred to as the Runoff Pond) via concrete swales. Overland runoff from the soil and seeded areas of the site flows directly to the concrete swales which discharge to the Runoff Pond. Overland runoff from the exposed ash disposal areas of the site is filtered before it gets to concrete drainage swales that lead to the Runoff Pond. The filter consists of a filter fabric laid against a 5-6 foot high wall of 4-inch stones. The stormwater passes through the filter into the concrete swales, prior to entering the Runoff Pond.

Rainfall that leaches through the ash and cover soil is conveyed to an approximately 590,000-gallon lined pond (referred to as the Leachate Pond) through buried pipes. The Leachate Pond is drained and discharges to the Runoff Pond when the Leachate Pond reaches capacity. The Runoff Pond is drained and discharges via Outfall 004 to the Schuylkill River when it reaches capacity. The Runoff Pond discharges to the Schuylkill River via Outfall 004 either intermittently or continuously, as required. Outfall 004 is currently permitted by the PADEP (via NPDES Permit No. PA0010782) for an effluent discharge rate of 1.3 mgd.

TDS in the BCAD effluent is due to the wastewater's contact with the limestone rip-rap lining of the Leachate and Runoff Ponds.

The project facilities are not located in the 100-year floodplain.

Prior facilities and processes for the TGS have been described in the following DRBC Dockets:

DOCKET NO.	DATE APPROVED BY DRBC
D-1974-032-1	February 23, 1977
D-1974-032 Rev	October 8, 1980
D-1987-026-1	February 24, 1988
D-1987-026-2	September 26, 2005
D-1987-026 CP-3	May 11, 2011

Sludge generated by the TGS operations formerly was disposed of at the on-site BCAD. No sludge is generated as a result of the current operations.

c. **Water Withdrawals.** The docket holder indicated that the facility no longer withdraws process and cooling water from its intake on the Schuylkill River, since the coal-fired generating units have been decommissioned and the combustion turbines are air-cooled. A small amount of service water is withdrawn from on-site wells at a withdrawal rate that is below DRBC's review threshold. Bottled water is purchased for drinking water supply. The docket holder's former surface water intake is not approved by the DRBC. Prior to the facility withdrawing surface water from this or any surface water intake, the docket holder is required to submit an application and obtain DRBC approval for the surface water withdrawal.

d. **NPDES Permit / DRBC Docket.** NPDES Permit No. PA0010782 was issued by the PADEP on February 23, 2016 and includes final effluent limitations for the project discharge of 1.3 mgd to surface waters classified by the PADEP as Warm Water Fishery (WWF). The following average monthly effluent limits and monitoring requirements are for DRBC parameters.

EFFLUENT TABLE A: DRBC Parameters Included in NPDES permit

OUTFALL 004 (Schuylkill River)		
PARAMETER	LIMIT	MONITORING
pH (Standard Units)	6 to 9 at all times	As required by NPDES Permit
Total Suspended Solids	30 mg/l	As required by NPDES Permit
Total Dissolved Solids*	3,500 mg/l	As required by NPDES Permit

* See Condition II.t. in DECISION section

e. **Relationship to the Comprehensive Plan.** The TGS and its discharge were added to the Comprehensive Plan via Docket No. D-1987-026 CP-3 on May 11, 2011.

B. FINDINGS

This docket renews approval of the docket holder's existing discharge of treated industrial wastewater effluent from the TGS, and to update the docket approval to reflect modifications to the facility operations associated with the closing of the TGS coal-fired generating units. The modifications consist of the decommissioning of the coal-fired generating units, the TGS IWTP, and the TGS WWTP, as well as the elimination of two (2) process water discharges (Outfalls 001 and 002). Outfall 001 remains active as a stormwater outfall only. The facility will continued to discharge leachate from the BCAD site via Outfall 004.

Docket Transfer of Ownership

This docket also approves the transfer of ownership from GenOn Energy, Inc. to NRG REMA LLC. The transfer occurred in February, 2014.

Total Dissolved Solids (TDS) Effluent Limit Determination

The Commission approved a monthly average TDS variance of 3,500 mg/l for Outfall 004 (the BCAD site) on September 26, 2005 via Docket No. 1987-026-2. TDS is generated from the contact with the limestone rip-rap lining of the Leachate and Runoff Ponds. The docket holder requested the continuance of this TDS determination.

Section 3.10.4.D.2 of the DRBC's *Water Quality Regulations (WQR)* states:

“Total dissolved solids shall not exceed 1000 mg/l, or a concentration established by the Commission which is compatible with designated water uses and stream quality objectives, and recognizes the need for reserve capacity to serve future dischargers.”

The Commission's basin-wide in-stream TDS criteria is that the receiving stream's resultant TDS concentration be less than 133% of the background (WQR Section 3.10.3.B.1.b.) and the receiving stream's resultant TDS concentration be less than 500 mg/l (WQR Section 3.10.3.B. 2.). The discharge is required to comply with the more stringent of the above in-stream criteria.

The 133% of the background TDS requirement is for the protection of aquatic life. The 500 mg/l TDS requirement is to protect the use of the receiving stream as a drinking water source. The EPA's Safe Drinking Water Act secondary standard for TDS is 500 mg/l.

According to the PADEP, the estimated seven-day low flow with a recurrence interval of ten years (Q_{7-10} flow) of the Schuylkill River immediately upstream of the Outfall 004 discharge is 212 cfs (137 mgd). During the review of the Docket No. D-1987-026-3, DRBC estimated Schuylkill River in-stream TDS concentration based on available data compiled from two (2) sources: 1) the United States Geological Survey (USGS) National Water Information System (NWIS) and 2) the US EPA's STORET database. Based on the available data, the estimated background TDS concentration in the Schuylkill River upstream of the BCAD discharge is 370 mg/l. 133% of 370 mg/l is 492 mg/l; therefore the DRBC in-stream requirement of 133% of background remains the more stringent of the two (2) Commission in-stream requirements.

Docket No. D-1987-026-3 evaluated TDS concentrations in the Schuylkill River as a result of the BCAD discharge using a flow rate of 1.007 mgd; however, the effluent limits for Outfall No. 004 contained within NPDES Permit No. No. PA0010782, issued on February 23, 2016, were determined using a discharge rate of 1.3 mgd. Based on the estimated background TDS concentration in the Schuylkill River of 370 mg/l, the Q_{7-10} flow of the Schuylkill River of 137 mgd, the BCAD discharge of 1.3 mgd with an effluent TDS concentration of 3,500 mg/l, the TDS in the Schuylkill River would be raised to 399 mg/l during Q_{7-10} flows. If there was a discharge from the BCAD under these conditions, the BCAD flow would raise background TDS to 108 %.

Although the discharge exceeds DRBC's basin-wide TDS effluent limit of 1,000 mg/l, DRBC staff determined the discharge to be compatible with the Commission's designated water uses and water quality objectives in conformance with DRBC Water Quality Regulations since the in-stream concentrations in the Schuylkill River are not expected to exceed the US EPA's Safe Drinking Water Act's secondary standard for TDS is 500 mg/l nor exceed the Commission's criteria of 133% of background as a result of the facility discharge. Therefore, the 3,500 mg/l effluent limit for Outfall 004 approved in Docket No. D-1987-026-5 is continued via this docket.

Former Surface Water Withdrawal

DRBC issued Legal Entitlement No. 204 to previous owner of the TGS, Metropolitan Edison Company, on July 15, 1976, which permitted a withdrawal of Schuylkill River water from an intake of 5,212.58 mg/month of surface water for non-consumptive purposes and 54.83 mg/month for consumptive use. However, the entitlement was rescinded via letter from the DRBC on December 6, 1999 after the transfer of ownership from Metropolitan Edison Company

to Sithe Energies. The docket holder indicated that the facility no longer withdraws process and cooling water from its intake on the Schuylkill River, since the coal-fired generating units have been decommissioned and the combustion turbines are air-cooled. Prior to the facility withdrawing surface water from this or any surface water intake, the docket holder is required to submit an application and obtain DRBC-approval for the surface water withdrawal.

At the project site, the Schuylkill River has a seven-day low flow with a recurrence interval of ten years of 137 mgd (212 cfs). The ratio of this low flow to the NPDES-permitted wastewater discharge from the TGS outfall (1.3 mgd) is approximately 100 to 1.

The nearest downstream public water supply intake of record is operated by the Pottstown Water Authority, located on the Schuylkill River approximately 15 river miles downstream from the TGS.

The project does not conflict with the Comprehensive Plan and is designed to prevent substantial adverse impact on the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

The project is designed to produce a discharge meeting the effluent requirements as set forth in the Commission's *WQR*.

C. DECISION

I. Effective on the approval date for Docket No. D-1987-026 CP-4 below:

- a. The project described in Docket D-1987-026 CP-3 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-1987-026 CP-4; and
- b. Docket No. D-1987-026 CP-3 is terminated and replaced by Docket D-1987-026 CP-4.
- c. The project and the appurtenant facilities described in Section A "Physical Features" of this docket shall be added to the Comprehensive Plan.

II. The project and appurtenant facilities as described in the Section A "Physical features" of this docket are approved pursuant to Section 3.8 of the *Compact*, subject to the following conditions:

- a. Docket approval is subject to all conditions, requirements, and limitations imposed by the PADEP in its NPDES permit, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission's.
- b. The facility and operational records shall be available at all times for inspection by the DRBC.
- c. The facility shall be operated at all times to comply with the requirements of the Commission's *WQR* and Flood Plain Regulations (*FPR*).

d. The docket holder shall comply with the requirements contained in the EFFLUENT TABLE in Section A.4.d. of this docket. The docket holder shall submit the required monitoring results electronically to the DRBC Project Review Section via email aemr@drbc.state.nj.us on the **Annual Effluent Monitoring Report Form** located at this web address: <http://www.state.nj.us/drbc/programs/project/pr/info.html>. The monitoring results shall be submitted annually, absent any observed limit violations, by January 31. If a DRBC effluent limit is violated, the docket holder shall submit the result(s) to the DRBC within 30 days of the violation(s) and provide a written explanation that states the action(s) the docket holder has taken to correct the violation(s) and protect against any future violations.

e. Except as otherwise authorized by this docket, if the docket holder seeks relief from any limitation based upon a DRBC water quality standard or minimum treatment requirement, the docket holder shall apply for approval from the Executive Director or for a docket revision in accordance with Section 3.8 of the *Compact* and the *Rules of Practice and Procedure*.

f. If at any time the receiving treatment plant proves unable to produce an effluent that is consistent with the requirements of this docket approval, no further connections shall be permitted until the deficiency is remedied.

g. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.

h. The docket holder is permitted to treat and discharge wastewaters as set forth in the Area Served Section of this docket, which incorporates by reference Sections B (Type of Discharge) and D (Service Area) of the docket holder's Application to the extent consistent with all other conditions of this DECISION Section.

i. The docket holder shall make wastewater discharge in such a manner as to avoid injury or damage to fish, wildlife, and/or other aquatic life and shall avoid any injury to public or private property.

j. No sewer service connections shall be made to newly constructed premises with plumbing fixtures and fittings that do not comply with water conservation performance standards contained in Resolution No. 88-2 (Revision 2).

k. Nothing in this docket approval shall be construed as limiting the authority of DRBC to adopt and apply charges or other fees to this discharge or project.

l. The issuance of this docket approval shall not create any private or proprietary rights in the waters of the Basin, and the Commission reserves the right to amend, suspend or rescind the docket for cause, in order to ensure proper control, use and management of the water resources of the Basin.

m. Unless an extension is requested and approved by the Commission in advance, in accordance with paragraph 11 of the Commission's Project Review Fee schedule

(Resolution No. 2009-2), the docket holder is responsible for timely submittal of a docket renewal application on the appropriate DRBC application form at least 12 months in advance of the docket expiration date set forth below. The docket holder will be subject to late charges in the event of untimely submittal of its renewal application, whether or not DRBC issues a reminder notice in advance of the deadline or the docket holder receives such notice. In the event that a timely and complete application for renewal has been submitted and the DRBC is unable, through no fault of the docket holder, to reissue the docket before the expiration date below (or the later date established by an extension that has been timely requested and approved), the terms and conditions of the current docket will remain fully effective and enforceable against the docket holder pending the grant or denial of the application for docket approval.

n. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

o. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the Rules of Practice and Procedure. In accordance with Section 15.1(p) of the Delaware River Basin Compact, cases and controversies arising under the Compact are reviewable in the United States district courts.

p. The docket holder may request of the Executive Director in writing the substitution of specific conductance for TDS. The request should include information that supports the effluent specific correlation between TDS and specific conductance. Upon review, the Executive Director may modify the docket to allow the substitution of specific conductance for TDS monitoring.

q. The docket holder is prohibited from treating/pre-treating any hydraulic fracturing wastewater from sources in or out of the Basin at this time. Should the docket holder wish to treat/pre-treat hydraulic fracturing wastewater in the future, the docket holder will need to first apply to the Commission to renew this docket and be issued a revised docket allowing such treatment and an expanded service area. Failure to obtain this approval prior to treatment/pre-treatment will result in action by the Commission.

BY THE COMMISSION

DATE APPROVED: June 15, 2016

EXPIRATION DATE: February 28, 2021