

DOCKET NO. D-2010-036 CP-2

DELAWARE RIVER BASIN COMMISSION

**Exelon Generation Company, LLC
Fairless Hills Generating Station
Non-Contact Cooling Water Discharge
Falls Township, Bucks County, Pennsylvania**

PROCEEDINGS

This docket is issued in response to an Application submitted to the Delaware River Basin Commission (DRBC or Commission) by Exelon Generation Company, LLC (Exelon or docket holder) on April 24, 2012 (Application), for renewal of an existing non-contact cooling water (NCCW) discharge from the Fairless Hills Generating Station (FHGS). Issuance of the Pennsylvania Department of Environmental Protection (PADEP) National Pollutant Discharge Elimination System (NPDES) Permit No. PA0057088 for this facility is expected shortly.

The Application was reviewed for the continuation of the project in the Comprehensive Plan and approval under Section 3.8 of the *Delaware River Basin Compact*. The Bucks County Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on March 10, 2015.

A. DESCRIPTION

1. Purpose. The purpose of this docket is to renew the approval of an existing average discharge of 42.6 million gallons per day (mgd) of Power Plant Condenser Cooling Water (PPCCW), NCCW and stormwater from the FHGS via Outfall No. 001. This is an increase in the previous flow of 37.4 mgd approved in Docket D-2010-036 CP-1.

2. Location. Outfall No. 001 will continue to discharge to Water Quality Zone 2 of the Delaware River at River Mile 126.85. The FHGS is located on the US Steel complex in Falls Township, Bucks County, Pennsylvania as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001	40° 08' 12"	74° 44' 59"

3. Area Served. Energy produced by the FHGS supplies the Pennsylvania-Jersey-Maryland (PJM) grid. Outfall No. 001 receives PPCCW, NCCW and stormwater from the FHGS site and two adjacent properties.

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. The docket holder's energy generating facility discharges an average of 42.6 mgd of PPCCW, NCCW and stormwater from existing Outfall No. 001. The maximum condenser design cooling flow rate is 73.15 mgd. Stormwater originates from the Exelon facility and two adjacent properties. There is no treatment of this wastewater stream prior to its discharge to the Delaware River. PADEP has approved the use of three (3) chemical additives which are used to control scaling and microbial fouling within the cooling system.

b. Facilities. The existing FHGS consists of two (2) steam turbines (Turbine Generators A & B) that generate power for the PJM grid. PPCCW, NCCW and stormwater from the FHGS are collected and discharged to the tidal Delaware River in Water Quality Zone 2 via Outfall No. 001.

Condensate, blowdown, and sanitary wastewater totaling approximately 1.7 mgm is conveyed to the US Steel WWTP for treatment prior to discharge to the Delaware River. The US Steel WWTP was approved by the Commission on May 11, 2011 via Docket No. D-1978-068-3.

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

c. Water withdrawals. Potable and process cooling water are obtained from US Steel. The surface water withdrawal (SWWD) from the Delaware River for this supply is described in detail in Docket No. D-2009-006-1 and the subsidiary water allocation for Exelon is described in Docket No. D-1996-063 CP-2, which were both approved December 8, 2010.

d. NPDES Permit / DRBC Docket. PADEP NPDES Permit No. PA0057088, which is expected to be issued shortly, includes final effluent limitations for the project discharge of 42.6 mgd to surface waters classified by the PADEP as Warm Water Fishery (WWF). The following average monthly effluent limits are among those listed in the NPDES Permit and meet or are more stringent than the effluent requirements of the DRBC. The DRBC has requested that the Commission's TDS and Delta T monitoring requirements be included in the PADEP NPDES permit. Delta T must be calculated by subtracting the influent temperature from the effluent temperature. The docket holder requested a 6 month implementation period for the delta T monitoring to allow time for the installation of the necessary monitoring equipment. Condition C.II.h. requires that the weekly influent and effluent temperature monitoring for purposes of calculating a delta T value begin within 6 months of the approval date of this docket.

EFFLUENT TABLE A-1: DRBC Parameters Included in NPDES Permit

OUTFALL 001 (PPCCW, NCCW and Stormwater Runoff)		
PARAMETER	LIMIT	MONITORING
pH (Standard Units)	6 to 9 at all times	As required by NPDES Permit
Temperature	110 ° F (Max) or 19.4 ° F rise from the intake to Outfall No. 001*, whichever is less	As required by NPDES Permit
Total Dissolved Solids**	1,000 mg/l *	As required by NPDES Permit
PCBs***	Monitor & Report	As required by NPDES Permit

* DRBC Requirement

** See Condition II.p.

*** See Condition II.q.

e. **Cost.** There are no project costs associated with this existing discharge.

f. **Relationship to the Comprehensive Plan.** The FHGS discharge was included in the Comprehensive Plan via the December 8, 2010 approval of Docket No. D-2010-036 CP-1.

B. FINDINGS

This docket renews the approval of an existing average discharge of 42.6 million gallons per day (mgd) of Power Plant Condenser Cooling Water (PPCCW), NCCW and stormwater from the FHGS via Outfall No. 001. This is an increase in the previous flow of 37.4 mgd approved in Docket D-2010-036 CP-1. Effluent limits for the FHGS are based upon the average annual discharge of 42.6 mgd.

The docket holder requested that total dissolved solids, total suspended solids, CBOD5 and ammonia nitrogen be removed from the PADEP and DRBC effluent monitoring requirements. The discharge is predominately NCCW and the FHGS is not discharging significant loadings to the Delaware River. Effluent sample data collected from April 2012 through 2013 indicate that average concentrations TDS, TSS, CBOD5 and ammonia nitrogen are 105 mg/l, 6.8 mg/l, 0.29 mg/l and 0.15 mg/l, respectively. Because these concentrations are below DRBC effluent limits and are not expected to increase as a result of the docket holder's usage/process, monitoring for TSS, CBOD5 and ammonia nitrogen are not required by this docket. TDS monitoring will continue to be required by this docket.

Potable and process cooling water for use at the FHGS is obtained from US Steel. The surface water withdrawal (SWWD) from the Delaware River for this supply is described in detail in Docket No. D-2009-006-1 and the subsidiary water allocation for Exelon are described in Docket No. D-1996-063 CP-2, which were both approved December 8, 2010. The docket permits FHGS to receive up to 4,795.7 million gallons per month of water from US Steel for use at the FHGS.

Polychlorinated Biphenyl (PCBs)

The docket holder is required to monitor for 209 PCB congeners using Method 1668A one time per year during wet weather at a location described in the NPDES Permit and implement Pollution Minimization Plans (PMPs) for PCBs as required in the NPDES Permit (See DECISION Condition II.q.).

Heat Dissipation Area

Section 4.30.6.C. of the Commission's WQR require that discharges to Zone 2 shall not result in an induced temperature increase of 5°F (2.8°C) above the average 24-hour temperature gradient displayed during the 1961-1966 period, or a maximum of 86°F (30.0°C), whichever is less.

On January 28, 1998 PECO, sent a letter to the Commission requesting a 1,000 foot radius heat dissipation area around Outfall No. 001 in accordance with Condition I.m. of Docket No. D-96-63. Section 4.30.6.F.3. of the Commission's WQR allows for heat dissipation areas up to 3,500 feet in length, two-thirds the surface width, and a maximum cross section up to one-quarter of the cross-sectional area of the stream in Zone 2. PECO's January 28, 1998 CORMIX Model Report accompanying the letter supports that under the 1961-1966 condition a thermal mixing zone need not be larger than 1,000 feet. Commission staff reviewed the report and the Executive Director issued a letter dated October 20, 1998 approving the requested heat dissipation area. Docket D-2010-036 CP-1 approved the 1,000 foot radius heat dissipation area around Outfall No. 001.

Because the effluent rate and temperature parameters used in the 1998 CORMIX Model run differ from the current flow and effluent temperature limits approved in the PADEP NPDES permit, the Commission requested that the docket holder submit the results of an updated thermal model as part of the docket renewal. The docket holder's engineer, Environmental Resources Management (ERM), performed a CORMIX Modeling Study (Study) that determined the Heat Dissipation Area (HDA) required during maximum flow (76.32 mgd) and a temperature rise of 19.4 degrees F (based on condenser design documents) from intake to Outfall No. 001 is 2,000 feet along channel (1,000 feet upstream and 1,000 feet downstream from Outfall No. 001) by 600 feet (cross channel). The Study also demonstrated that conservative estimates of a HDA also meet the Commission's guideline HDA. Commission staff agree and therefore the heat dissipation area has been modified to match this area (see Condition II.h. in the Decision section of this docket). Effluent temperatures are limited to 19.4 degree F increase from the intake (Delta T) or a maximum temperature of 110 degrees F, whichever is less.

Other

At the project discharge site, the Delaware River is tidal and its flow is regulated by upstream reservoir releases. The Trenton low flow target is 2,500 cfs (1.62 billion gallons per day). The addition of the tidal tributaries upstream of the discharge location at their Q7-10 flow and the low flow Trenton target results in a low flow of 2,634 cfs (1.702 billion gallons per day) for the Delaware River at the discharge location (River Mile 127.0). The ratio of this low flow to

the average wastewater discharge from Outfall No. 001 (42.6 mgd) is 40 to 1 (2.5 % of low flow).

There are no surface water intakes of record for public water supply within 7 miles of this tidal discharge in either direction.

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 limits in the NPDES Permit are in compliance with Commission effluent quality requirements, where applicable.

The project is designed to produce a discharge meeting the effluent requirements as set forth in the *Water Quality Regulations* of the DRBC.

C. DECISION

I. Effective on the approval date for Docket No. D-2010-036 CP-2 below:

- a. The project described in Docket No. D-2010-036 CP-1 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-2010-036 CP-2; and
- b. Docket No. D-2010-036 CP-1 is terminated and replaced by Docket No. D-2010-036 CP-2; and
- 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 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*.
- d. The docket holder shall comply with the requirements contained in the EFFLUENT TABLES 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/application/index.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 discharge of wastewater shall not increase the ambient temperatures of the receiving waters by more than 5°F above the average 24-hour temperature gradient displayed during the 1961-1966 period, nor shall such discharge result in stream temperatures exceeding 86°F, except within an assigned heat dissipation area consisting of a 1,000 feet both upstream and downstream (2,000 feet total) and 600 feet laterally away from Outfall No. 1. Weekly influent and effluent temperature monitoring is required to begin within 6 months from the approval date of this docket (September 11, 2015).

i. 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.

j. The docket holder shall make wastewater discharge in such a manner as to avoid injury or damage to fish or wildlife and shall avoid any injury to public or private property.

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 shall continue to submit PCB monitoring data and PMP Annual Reports to the Commission's Modeling, Monitoring and Assessment Branch as required in the NPDES Permit.

BY THE COMMISSION

DATE APPROVED: March 11, 2015

EXPIRATION DATE: March 11, 2020