

DOCKET NO. D-1998-039-2

DELAWARE RIVER BASIN COMMISSION

**Northeastern Power Company
Surface Water Withdrawal
Kline Township, Schuylkill County, Pennsylvania**

PROCEEDINGS

This docket is issued in response to an Application submitted by WJP Engineers on behalf of Northeastern Power Company (NEPCO or docket holder) to the Delaware River Basin Commission (DRBC or Commission) on April 8, 2013 for the renewal of an allocation of surface water and review of a an existing surface water withdrawal project (Application). The surface water withdrawal was approved by the Commission via Docket No. D-98-39 on March 7, 2000. The surface water withdrawal does not require approval by the Pennsylvania Department of Environmental Protection.

The Application was reviewed for approval under Section 3.8 of the *Delaware River Basin Compact*. The Schuylkill County Planning Commission has been notified of pending action on this docket. A public hearing on this project was held by the DRBC on June 10, 2014.

A. DESCRIPTION

1. Purpose. The purpose of this project is to renew the approval of the NEPCO 50 Megawatt (MW) Electric/Steam cogeneration facility which includes an allocation of up to 6.2 million gallons per month (mgm) of surface water from the Silverbrook Deep Mine Pool overflow for use as process operations, non-contact cooling and fly-ash particulate control. Steam produced by the plant is used to heat a greenhouse facility located adjacent to the cogeneration plant. The docket also approves an existing groundwater withdrawal of up to 3.8 mgm from Wells Nos. 4, 5, 6, 7 and the Greenhouse Well, which are used for industrial purposes and potable water supply at the NEPCO plant and the greenhouse facilities and irrigation at the greenhouse facility. The allocation of surface water is not an increase in the previously approved allocation. Groundwater allocations were not specified by the previous dockets.

2. Location. The NEPCO electric/steam cogeneration facility and surface water withdrawal project are located southeast of the Route 309 and Interstate 81 interchange ramp in Kline Township, Schuylkill County, Pennsylvania. The surface water withdrawal is from a catchment basin constructed adjacent to the Silverbrook Deep Mine Pool overflow located approximately 300 feet south of the intersection of Route 309 and the plant access road. The abandoned mine drainage not collected by NEPCO discharges to the Little Schuylkill River approximately 400 feet south of the overflow. The wells are completed in the Pottsville Formation and are located

in the Little Schuylkill River Watershed in Kline Township, Schuylkill County, Pennsylvania. Little Schuylkill River near the project site is designated by the Pennsylvania Department of Environmental Protection (PADEP) as supporting Cold Water Fishes and Migratory Fishes (CWF/MF). Water quality and aquatic life have been affected by the acidic nature of the Silverbrook Mine Deep Mine Pool overflow.

Specific location information has been withheld for security reasons.

3. Area Served. The project withdrawals will continue to provide process and ash conditioning water to the docket holder's 50 megawatt (MW) steam/electric cogeneration facility situated on an approximate 450-acre plot in Kline Township, Schuylkill County, Pennsylvania. Steam produced by the plant will continue to be supplied at a rate of approximately 11,140 pounds per hour to existing onsite hydroponics greenhouses leased and operated by a commercial grower. The service area is outlined on various maps and plans submitted with the Application. For the purpose of defining Area Served, the Application is incorporated herein by reference consistent with conditions contained in the DECISION section of this docket.

4. Physical features.

a. Design criteria. The docket holder operates an existing 50 MW anthracite coal waste-fueled (typically refuse culm and silt) electric cogeneration plant which provides steam to an on-site hydroponics greenhouse. Electricity produced by the plant is sold to PJM Interconnection, L.L.C. for distribution within its regional service area. The majority of the fuel is imported from off-site sources. When needed, up to 10 percent of anthracite coal is also added to the waste-fuel to optimize combustion conditions. During combustion, limestone is added to the fuel to reduce sulfur dioxide emissions, which also neutralizes the ash. The plant operates on a 24-hour-a-day, 365-day per year basis.

Residual ash is stored in an ash silo where it is conditioned with water to minimize particulate air pollution. Once conditioned, the ash is used in the reclamation of abandoned strip mines, such as the Gorilla Pit, north of the power plant. The lime added to neutralize the ash helps reduce acid mine runoff from the reclamation areas. The plant design utilizes technologies to minimize and conserve water usage and consumption. Water is re-used and recycled whenever practical.

The primary source of water used for facility processes and ash conditioning is the Silverbrook Mine Pool overflow. NEPCO records an existing average and maximum surface water demand of 0.08 million gallons per day (mgd) and 0.2 mgd, respectively. Approximately 57 percent of the water is used for ash conditioning, 23 percent is used for cooling, 14 percent is used for boiler makeup water and 6 percent for process water.

An additional source of facility processes and ash conditioning water is obtained from Wells Nos. 4, 5, 6 and 7. These wells also supply potable water to the plant and greenhouse. In 2012, the average and maximum groundwater demand for these purposes was 0.06 mgd and 0.077 mgd, respectively. Irrigation water for greenhouse operations is supplied by the

Greenhouse Well, which is not connected to the potable water supply system. In 2012, the average and maximum groundwater demand for irrigation purposes was 0.03 mgd and 0.035 mgd, respectively. Based on PADEP and NEPCO data, total monthly groundwater withdrawals in 2010 were recorded at up to 3.8 mgm and during 2013 were up to approximately 2.8 mgm. The docket holder does not expect increases in its surface water or groundwater demands during the next 10 years. The continued allocation of 6.2 mgm of surface water and a total allocation of 3.8 mgm of groundwater should be sufficient to continue to meet the current and future demands of the facility.

b. Facilities. The electric/steam cogeneration plant facilities consist of a circulating fluidized bed boiler, a 50 MW steam turbine generator, a condenser unit, an air-cooled steam condenser, a cooling tower, an ash stabilization facility, and air pollution control facilities.

Water for plant processes and ash conditioning is obtained from the Silverbrook Deep Mine overflow and supplemented by groundwater from Wells Nos. 4, 5, 6 and 7. The surface water, characterized as acid mine drainage, is first pumped to a 0.831 mg surge tank and then conveyed to a pretreatment system which neutralizes the mine water, precipitates dissolved iron and heavy metals and removes suspended solids. Filtered water enters a clear well from which it is transferred to a 0.5 mg process water storage tank where it is then distributed throughout the facility. Filter backwash from the pretreatment system is returned to the head of the treatment system. Sludge from the filtering process is dewatered in a filter press and added to the ash for stabilization purposes.

The water used in the plant's boilers is further treated in an ionic exchange unit to demineralize the water. Wastewater from the demineralization system is produced during the regeneration of the ion exchange resin. All wastewater generated by the demineralization system is neutralized and transferred to the 0.0756 mg ash storage tank for use in ash stabilization. Boiler blowdown water is also transferred to the ash storage tank and used for the same purpose.

Cooling tower blowdown is transferred to the ash storage tank and used for ash stabilization purposes.

Potable water for the project is obtained from Wells Nos. 4, 5, 6 and 7. Irrigation water for the greenhouse is obtained from the Greenhouse Well. The potable water is filtered and treated with caustic soda for pH control and sodium hypochlorite for disinfection prior to distribution. Filter backwash from the potable water treatment system is transferred to the mine water pretreatment system. Domestic wastewater from the project is disposed via an on-site septic tank with leach field.

The existing project surface water intake and groundwater supply wells have the following characteristics:

WELL NO.	DEPTH	CASED DEPTH/ CASING DIAMETER	PUMP CAPACITY	YEAR DRILLED
4	50'	50 ' / 10"	21 gpm	1988
5	50'	50 ' / 10"	21 gpm	1988
6	50'	50 ' / 10"	21 gpm	1988
7	600'	40' / 6"	54 gpm	1990
Greenhouse Well	600'	40' / 10"	40 gpm	1999

INTAKE NO.	WITHDRAWAL WATER BODY	PUMP CAPACITY	7Q10 FLOW AT INTAKE (CFS)	YEAR CONSTRUCTED
Silverbrook Mine Pool Outfall	Silverbrook Deep Mine Pool Overflow	0.2 mgd	NA	1988

Well No. 2 included in the previous docket has been abandoned.

The Silverbrook surface water source and the Greenhouse well are individually metered. Wells Nos. 4, 5, 6 and 7 share a common meter.

Prior to entering the distribution system, groundwater and surface water is treated as described above.

Existing Wells Nos. 4, 5 and 6 are located within the 100-year floodplain of Lofty Creek.

The water system is not presently interconnected with any other water system.

c. Other. The majority of the cogeneration plant wastewater streams are transferred to the ash storage tank for use in ash stabilization. Some process wastewater and stormwater discharges from the cogeneration plant and the greenhouse do occur, but average less than 15,000 gallons per day. Process wastewater and stormwater is discharged to the surface at three locations as authorized by PADEP NPDES Permit No. PA-0061717 most recently approved on January 21, 2009.

Outfall 001 - Oil/Water Separator: Approximately 5,000 gallons of water are discharged to the Little Schuylkill River per day. The inflow to this point consists of drains from the transformer and oil tank storage dikes, the fuel oil unloading station, floor drains, and pump casing drains inside the boiler and turbine buildings. Prior to discharging, all wastewater is treated in an oil/water separator. This outfall is monitored monthly for pH, total suspended solids and oil/grease.

Outfall 002 – Emergency Ash Water Tank Overflow: Normally, no discharge occurs. Inflow to the tank is primarily blowdown from the main boiler and the auxiliary cooling tower and backwash water from the demineralizer treatment plant. The discharge point consists of a tank overflow pipe that drains to a swale that goes to on-site silt ponds, which drain to the Silverbrook Deep Mine Pool.

Outfall 003 - Greenhouse Discharge: This outfall consists of water from the central handling bay where most of the potting takes place. Wastewater contains tray, bench and general washdown water from the greenhouse operation. Approximately 5,000 gpd discharges to a swale that runs to the silt ponds and drain to the Silverbrook Mine Pool.

Domestic wastewater is conveyed to an onsite septic system. The treatment facility has adequate capacity to receive wastewater from the proposed project.

The sludge from the water treatment processes is applied to the fly ash for stability purposes; the ash is not acidic due to the addition of limestone in the furnace. The conditioned ash is used in mine reclamation.

- d. Cost.** There are no costs associated with this renewal project.

B. FINDINGS

The project is designed to conform to the requirements of the *Water Code* and *Water Quality Regulations* of the DRBC.

The facility processes chemically reactive mine water (which adds to acid mine runoff) and replaces it with relatively non-reactive fly ash for use in mine reclamation. Therefore, in addition to providing electric power, the facility reduces wastes that would cause adverse environmental impacts.

The total combined discharge will continue to average 15,000 gpd and be monitored under the applicant's existing NPDES permit. No increase in total combined discharge is proposed. An effluent pH between 6 to 9 units will be maintained as a result of the pre-treatment system designed to remove heavy metals, and the surface water quality is expected to improve as a result of the treated wastewater discharges.

The project is designed to produce a discharge meeting the stream quality objectives as set forth in the Water Quality Standards of the DRBC.

Project withdrawals are used for the purpose of power production and acid mine waste reclamation and the consumptive use is estimated to be 98 percent of the total water use. The DRBC definition of consumptive use is defined in Article 5.5.1.D of the *Administrative Manual – Part III – Basin Regulations – Water Supply Charges*.

This project consists of an existing withdrawal of surface water from the Silverbrook Mine Pool Outfall and groundwater from Wells Nos. 4, 5, 6, 7 and the Greenhouse Well. The docket holder has requested allocations based on pumping capacity and total allocations based on existing water use. These rates are provided in Decision Condition C.II.d. in the Decision Section of this docket. As the existing water withdrawals have already been realized by the local hydrologic system, there should be no significant impacts from continued withdrawals from the existing system wells.

Flood Plain Regulations

Wells Nos. 4, 5 and 6 are existing wells that are located within the 100-year floodplain of Lofty Creek. FEMA has not determined base flood elevations for this area. Based on a PADEP water supply inspection report, dated May 27, 2010, wells 4, 5 and 6 are equipped with sanitary seals. The project complies with the DRBC, *Administrative Manual – Part III, Basin Regulations – Floodplain Regulations*.

Surface Water Charges

The docket holder shall continue to pay for surface water use from the Silverbrook Mine Pool Overflow water diversion in accordance with the provisions of Resolution No. 74-6, as amended as described in Condition C.II.f. in the Decision section.

Adjacent EPA Superfund Site

The NEPCO facility is located in the vicinity of the former McAdoo Superfund site. This site is now delisted. Docket D-86-53 (Revised) approved on October 26, 1988 contained condition u. that stated: “There shall be no withdrawal of underground mine pool water via wells for this project.” EPA staff requested that this condition be retained by this docket approval.

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.

C. DECISION

I. Effective on the approval date for Docket No. D-1998-039-2 below, Docket Nos. D-86-53, D-86-53 (Revised) and D-98-39 are terminated and replaced by Docket No. D-1998-039-2.

II. The project and appurtenant facilities as described in the Section A “Physical features” 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, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission’s. The docket holder shall register

with and report to the PADEP all surface and groundwater sources described in this docket in accordance with the Pennsylvania Regulations (Title 25 - Environmental Protection, [25 PA. CODE CH. 110], Water Resources Planning).

b. The facility, water sources and operational records shall be available at all times for inspection by the DRBC.

c. The surface water withdrawal and wells shall be operated at all times to comply with the requirements of the *Water Code* and *Water Quality Regulations* of the DRBC.

d. During any month, the surface water withdrawal from the Silverbrook Mine Pool Outflow shall not exceed 6.2 million gallons. During any month, the groundwater withdrawal from all well sources shall not exceed 3.8 million gallons. No well shall be pumped above the maximum instantaneous rate and monthly allocation as indicated below:

WELL NO.	MAXIMUM INSTANTANEOUS RATE	MONTHLY ALLOCATION
4	21 gpm	0.937 mgm
5	21 gpm	0.937 mgm
6	21 gpm	0.937 mgm
7	54 gpm	2.41 mgm
Greenhouse Well	40 gpm	1.79 mgm

e. The wells shall be equipped, where possible, with readily accessible capped ports and minimum ½ inch inner diameter (ID) drop pipes as repairs or modifications are made at each existing well so that water levels may be measured under all conditions.

f. The docket holder shall pay for surface water use in accordance with the provisions of Resolution No. 74-6, as amended.

g. The project withdrawals shall be metered with an automatic continuous recording device that measures to within 5 percent of actual flow. An exception to the 5 percent performance standard, but no greater than 10 percent, may be granted if maintenance of the 5 percent performance is not technically feasible or economically practicable. A record of daily withdrawals shall be maintained, and monthly totals shall be reported to the PADEP annually and shall be available at any time to the Commission if requested by the Executive Director.

h. The docket holder shall implement to the satisfaction of the PADEP, the continuous program to encourage water conservation in all types of use within the facilities served by this docket approval. The docket holder will report to the PADEP on the actions taken pursuant to this program and the impact of those actions as requested by the PADEP.

i. The docket holder shall implement to the satisfaction of the PADEP, a drought or other water supply emergency plan.

j. Sound practices of excavation, backfill and reseeding shall be followed to minimize erosion and deposition of sediment in streams from any new facilities or repair related construction.

k. 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.

l. The docket holder is permitted to provide the water approved in this docket to the areas included in Section A.3. Area Served of this docket. Any expansion beyond those included in Section A.3. Area Served is subject to DRBC review and approval in accordance with Section 3.8 of the *Compact*.

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 issuance of this docket approval shall not create any private or proprietary rights in the water of the Basin, and the Commission reserves the rights to amend, alter or rescind any actions taken hereunder in order to insure the proper control, use and management of the water resources of the Basin.

o. If the monitoring required herein, or any other data or information demonstrates that the operation of this project significantly affects or interferes with any domestic or other existing uses of ground or surface water, or if the docket holder receives a complaint by any existing ground or surface water users within the zone of influence of the withdrawal, the docket holder shall immediately notify the Executive Director of any complaints by any ground or surface users within the zone of influence of the withdrawal, and unless excused by the Executive Director, shall investigate such complaints. The docket holder should direct phone call notifications of potential well or surface water interference or complaints of interference to the DRBC Project Review Section at 609-883-9500, extension 216. Oral notification must always be followed up in writing directed to the Executive Director. In addition, the docket holder shall provide written notification to all potentially impacted users of wells or surface water supplies of the docket holder's responsibilities under this condition. Any ground or surface water user which is substantially adversely affected, rendered dry or otherwise diminished as a result of the docket holder's project withdrawal, shall be repaired, replaced or otherwise mitigated at the expense of the docket holder. A report of investigation and/or

mitigation plan prepared by a hydrologist shall be submitted to the Executive Director as soon as practicable. The Executive Director shall make the final determination regarding the validity of such complaints, the scope or sufficiency of such investigations, and the extent of appropriate mitigation measures, if required.

p. 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.

q. For the duration of any drought emergency declared by either Pennsylvania or the Commission, water service or use by the docket holder pursuant to this approval shall be subject to the prohibition of those nonessential uses specified by the Governor of Pennsylvania, the Pennsylvania Emergency Management Council, PADEP, or the Commonwealth Drought Coordinator to the extent that they may be applicable, and to any other emergency resolutions or orders adopted hereafter by the Commission.

r. There shall be no withdrawal of underground mine pool water via wells for this project.

s. 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.

BY THE COMMISSION

APPROVAL DATE: June 11, 2014

EXPIRATION DATE: June 11, 2024