pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0088323**
Facility Type	**Industrial**	APS ID	**733521**
Major / Minor	**Minor**	Authorization ID	**1088048**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Ontelaunee Power Operations Co. LLC**	Facility Name	**Ontelaunee Energy Center**
Applicant Address	5115 Pottsville Pike	Facility Address	5115 Pottsville Pike (Hwy 61)
	Reading, PA 19605-9729		Reading, PA 19605
Applicant Contact	John Goodman	Facility Contact	Robert Coit
Applicant Phone	(610) 916-6565	Facility Phone	(610) 916-6537 / (304) 777-3947 (m)
Client ID	243726	Site ID	524211
SIC Code	4911	Municipality	Ontelaunee Township
SIC Description	Trans. & Utilities - Electric Services	County	Berks
Date Application Received	September 1, 2015 and September 11, 2020 addendum	EPA Waived?	No
Date Application Accepted	September 15, 2015	If No, Reason	Discharging pollutants identified in a TMDL, with new permit requirements for those pollutants
Purpose of Application	Renewal of existing IW permit with direct discharge to receiving water		

Summary of Review

The last NPDES permit was issued February 24, 2011, with an expiration date of February 29, 2016. The permit was administratively extended rather than expiring. The permittee was contacted in August 2020 and asked if there were updates at the facility since the application was submitted: they are investigating using some groundwater as supply water and reducing the amount of city water they use. The change could occur during the renewal permit's term but would not constitute a majority of the water supply. At this time, the volume of groundwater has not been determined nor has it been fully characterized. The change in water supply would not alter the design discharge flow.

Note: There is no use of coal at this generating facility. There are no river intakes. The facility was built above the 100-year flood elevation. Sanitary sewage is conveyed by sewer lines to Ontelaunee Township Municipal Authority Treatment Plant.

Per the application, the facility is a natural gas-fired combined-cycle electrical power plant, which generates a nominal 540 Megawatts of electricity, using two combustion turbines, two heat recovery steam generators (HRSGs), one steam turbine, and a mechanical draft wet cooling tower used to cool the main facility condenser water. A flow diagram is attached to this Fact Sheet. Plant floor drainage, miscellaneous plant wastewater, and reverse osmosis (RO) reject water and RO membrane cleaning water, and backwash from the on-site demineralization process which includes RO and electrodeionization, is conveyed through an oil/water separator and then to the cooling tower. Much of the cooling tower water ends up evaporating. The cooling tower blowdown discharges via outfall 001. The applicant represents that it is a 24-hour continuous discharge, as long as the plant is running, which is supported by the eDMR data.

Approve	Deny	Signatures	Date
x		*Bonnie Boylan* Bonnie J. Boylan / Environmental Engineering Specialist	September 16, 2020
x		*Maria D. Bebenek for Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	October 13, 2020
x		*Maria D. Bebenek* Maria D. Bebenek, P.E. / Environmental Program Manager	October 13, 2020

Summary of Review

The application specifies that the oil/water separator could convey directly to outfall 001 instead of to the cooling tower by opening a valve in emergency situations such as a fire sprinkler discharge. The Environmental Manager at Ontelaunee Power was specifically asked if the cooling tower would continue to contribute blowdown to outfall 001 during the time of such a diversion and the reply was 'no'. He was also asked if there is a separate discharge pipe from the oil/water separator that also terminates at outfall 001 which could be sampled when this wastewater is diverted away from the cooling tower. The response was that there is no separate discharge pipe to use as a separate monitoring location and the valve is not known to ever have been open and only exists for emergencies.

Combustion turbine wash water is collected and hauled off-site by a licensed transporter to a permitted wastewater treatment facility. Typically, four wash events occur per year using an industrial cleaner with surfactants and organic solvents. According to Ontelaunee Power's Environmental Manager, "All chemical metal cleaning wastewater is transported away from the site. It is not discharged through Outfall 001."

Stormwater is collected in a retention basin and normally used as cooling tower make-up water. If the basin is out of service or, occasionally, to minimize solids loading on a newly cleaned cooling tower, there will be occasional intermittent discharges of stormwater at outfall 002. A very large storm event could also allow for a discharge of stormwater at 'outfall 002'. Note that outfall 002 is not an on-site discharge to a waterway but a discharge from the site via two separate outlets to the same pipe leaving the property and conveying to a storm sewer system.

Design flows

In order to be adequately protective of the receiving water, the draft renewal permit limits were based on a design flow of 0.4 MGD rather than the previous 0.35 MGD.

The application did not provide annual average flows for the past 5 years in the Production Data for ELGs section of the application. Instead there was a comment: "electricity generation is based on demand; as such future generation will be based on regional power demand." DEP's Technical Guidance for the Development and Specification of Effluent Limitations [362-0400-001] states: "For example, in a highly-cyclical industry…where the production rate and wasteload varies widely…, it may be more representative to select a rate based on the highest production month over the past five years." The flows reported on Discharge Monitoring Reports (DMRs) were then reviewed for the past 5 ½ years. The highest discharge over the past 5 ½ years occurred in September 2019 when the monthly average was 0.48 MGD. Because 0.48 MGD was much higher than the 90th percentile of all monthly average flows for the past 5 ½ years (0.32 MGD), however, it was not used as the design flow. Instead, the 90th percentile of monthly average flows for the year with the highest discharge out of the past 5 ½ years was chosen as the design flow for the draft renewal permit: 0.4 MGD. Reviewed DMR flow rates between April 1, 2011 and December 31, 2019 indicated that only one month during those years averaged greater than 0.4 MGD.) See the attached table of past flows.

There are pumps at the facility which are run continuously when the generating station is operational but the discharge flows used for the permit were taken from the eDMR data instead of the pump capacities because the majority of the pumped water is recirculated and only a minor portion is discharged to outfall 001, as explained by Ontelaunee Power's Environmental Manager.

316(a) and 316(b) of the Clean Water Act (CWA)

Not Applicable.

Section 316(a) of the CWA provides that thermal dischargers can be granted less stringent thermal limits ("variances") if they can demonstrate the current effluent limitations for Temperature, based on water quality standards or regulations, are more stringent than necessary to protect the aquatic life of the receiving waterway. No such variance request was received from the applicant. The discharge is not causing or expected to cause an exceedance of in-stream Temperature water quality criteria. The NPDES permit includes numeric effluent limits and narrative conditions for Temperature based on DRBC's Water Quality Regulations 18 CFR Part 410 and State water quality standards of Title 25 PA Code Chapter 93.

Section 316(b) of the CWA does not apply since the supply water to the facility is treated city water from the Reading Area Water Authority, not water from a surface water intake.

Summary of Review

EPA Rating

The DEP's Standard Operating Procedure (SOP) for New and Reissuance Industrial Wastewater Permits states that a new EPA NPDES Permit Rating Work Sheet should be completed for every electric generating station to determine if it should be classified as a "Major" permit which necessitates EPA review of the permit and higher fees. *The EPA rating sheet considers steam electric power plants with power output of 500 Megawatts or greater a "Major" category but identifies an exclusion: power plants using a cooling pond/lake. The permit writer asked EPA and DEP's Central Office if cooling towers instead of ponds would also qualify for the exclusion: the rating sheet instructions are very old and do not mention cooling towers. When no responses were received, the permittee's existing category of "Minor with ELG" was not changed.*

DRBC

This facility discharges to a waterway within the Delaware River watershed. The fact sheet and draft permit will therefore be forwarded to the Delaware River Basin Commission (DRBC) in accordance with State regulations and an interagency agreement. Any comments by the DRBC will be considered. A docket exists for this facility: D-2000-14, issued September 28, 2000, with an expiration date of September 28, 2025. The docket was issued before construction of the facility. No docket amendments were posted on DRBC's website. The docket recognized approximately 0.35 MGD of cooling tower blowdown. It also included a) a TDS allowance of 1500 mg/l as a Monthly Average and 3000 mg/l as a Daily Maximum); b) a waiver of the Total Zinc effluent limit guideline of 0.6 mg/l [included in the 1976 Interpretative Guideline No. 1 of DRBC's Water Quality Regulations]; and c) a provision that the facility will reduce operations or shutdown when the Delaware River lower basin is experiencing low-flow conditions and the storage levels in the Delaware River Basin are low in accordance with the DRBC's Drought Management Plan. In a November 29, 2001 letter from the DRBC to the permittee, the TDS allowance was raised to 2400 mg/l as a Monthly average but the Daily Maximum limit of 3000 mg/l stayed the same.

Outstanding Violations

Neither the eFacts nor WMS databases showed outstanding violations for this site.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.


OntelauneeFS_Attach_1.pdf


OntelauneeFS_Attach_2.pdf


OntelauneeFS_Attach_3.pdf


PA0088323_EPA_Major_Rating_Sht.pdf


Ontelaunn_Attachmt_4.pdf

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.40 (equiv. of 0.62 cfs)
Latitude	40º 24' 58"	Longitude	-75º 56' 30"
Quad Name		Quad Code	
Wastewater Description:	Cooling tower blowdown as well as low volume wastewater: HRSG blowdown, floor drainage, RO reject water, RO membrane cleaning water, backwash from demineralization system		
Receiving Waters	Schuylkill River (WWF)	Stream Code	0833
NHD Com ID	26000372	RMI	86.4 per prev. permit
Drainage Area	641 sq miles	Yield (cfs/mi^2)	0.23
Q_{7-10} Flow (cfs)	150 (equiv. of 97 MGD)	Q_{7-10} Basis	PA Stream Stats on-line
Elevation (ft)	255, per eMap, topo layer	Slope (ft/ft)	
Watershed No.	3-B	Chapter 93 Class.	WWF
Existing Use	(no difference from designated use)	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired for Fish Consumption		
Cause(s) of Impairment	PCBs		
Source(s) of Impairment	Unknown		
TMDL Status	Final	Name	Schuylkill River PCB TMDL

Background/Ambient Data		Data Source WQN 113 (upstream, none closer)
pH (SU)	7.8	
Temperature (°F)	25ºC	
Hardness (mg/L)	152	
Other:		

Nearest Downstream Public Water Supply Intake		Pottstown Boro Auth	
PWS Waters	Schuylkill River	Flow at Intake (cfs)	
PWS RMI	57 approx.	Distance from Outfall (mi)	29, approx

Changes from last permit's Fact Sheet:

Gage correlation with an upstream gage was used to determine a Low Flow Yield (LFY) of 0.24 cfs/mi^2, but the result was similar to the above LFY of 0.23 cfs/mi^2.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	002 (storm drain to MS4)	Design Flow (MGD)	0
Latitude	40º 25' 17"	Longitude	-75º 56' 18"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Muhlenberg Twp MS4 (storm sewer)	Stream Code	0833
NHD Com ID		RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-B	Chapter 93 Class.	WWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status			
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status			

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Treatment Facility Summary

Treatment Facility Name: Ontelaunee Energy Center

WQM Permit No.	Issuance Date
0602201	4/19/ 2002

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Dechlorination/ Cooling before discharge			-

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
-	-	-	-	-

Changes Since Last Permit Issuance: None

Other Comments:

Their cooling tower blowdown is treated with a dechlorination system consisting of a 400-gallon sodium bisulfate storage vessel, two reagent feed pumps controlled by a PLC, an in-line mixer, and an effluent flow monitor

Compliance History

A summary of recent eDMRs is attached to the Fact Sheet.

A summary of Non-compliances is attached to the Fact Sheet.

Two permit exceedances occurred: 2413 mg/l as the Average Monthly TDS concentration during April 2019, a month in which a forced outage occurred; and 64 mg/l as a Daily Maximum TSS concentration during October 2018, slightly over the permit limit of 60 mg/l. No other exceedances were noted per the WMS summary of compliance or the eDMR download (attached).

The last DEP compliance inspection, as recorded in WMS database, occurred on August 1, 2017:

-No violations were issued.
-Outfall 001 was observed with no apparent issues.
-Flow meter on discharge pipe is equipped with Totalizer and SCADA.
-Staffing schedule for facility is two 12-hour shifts.
-Emergency generator exists for stand-by power.
-The stormwater basin is lined and has a capacity of 1.4 million gallons.
-There was no discharge at stormwater outfall 002 during the inspection.
-Inspector sampled 001 with following results: pH of 6.64 s.u., DO of 6.87 mg/l, TRC of 0.13 mg/l, Temperature of 28.1^{o}C

PREVIOUS PERMIT LIMITS:

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measure-ment Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/day	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/week	Grab
TRC	XXX	XXX	XXX	0.2	XXX	0.5	1/day	Grab
Temperature (ºF)	XXX	XXX	XXX	XXX	Report	XXX	1/day	I-S
TSS	Report	Report	XXX	30	60	75	1/week	24-Hr Composite
Total Dissolved Solids	Report	Report	XXX	2400	3000	3000	1/week	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	15	30	30	1/week	Grab
Total Chromium	Report	Report	XXX	0.20	0.40	0.5	1/week	24-Hr Composite
Total Zinc	Report	Report	XXX	1.0	2.0	2.5	1/week	24-Hr Composite
PCBs (Dry Weather)	XXX	XXX	XXX	XXX	Report	XXX	1/year	24-Hr Composite
PCBs (Wet Weather)	XXX	XXX	XXX	XXX	Report	XXX	1/year	24-Hr Composite

DEVELOPMENT OF EFFLUENT LIMITS FOR OUTFALL 001

Technology-Based Effluent Limitations (TBELs)

When there is more than one TBEL for a pollutant, the more stringent one applies.

Changes to the **federal Effluent Limitation Guidelines (ELGs**) for Steam Electric Generating Stations were promulgated in 2015, since the last permit's issuance. While there are additional proposed revisions to 40 CFR Part 423, the 2019 proposed rule pertains to flue gas desulfurization and bottom ash transport waste streams. This facility does not have those types of waste streams.

The original ELGs were promulgated in 1992, before this facility commenced operations in 2002. The New Source Performance Standards in the ELGs therefore apply and compliance schedules to meet the ELGs are not allowed. All federal ELGs are intended to be met by treatment without dilution from other waste streams. The below ELG limits apply* and are considered Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT), and Best Available Technology Economically Achievable (BAT). The facility has both low volume wastewater (<10% of the discharge) and cooling tower blowdown. The applicant has represented to the Department that chemical metal cleaning wastewaters will not be discharged, therefore the Iron and Copper limits in the ELGs for such wastewater have not been imposed. Similarly, other types of wastewaters included in the ELGs for Steam Electric point sources do not apply: coal ash transport water, coal pile runoff, scrubber wastewater, once-through cooling water, combustion residual leachate, ash transport water, etc.

Parameter	Limit	Units	SBC	Federal Regulation
pH	6.0 / 9.0	s.u.	Instant.Min/InstantMax.	40 CFR Part 423.15(a)(1)
TSS	30.0 / 100.0	mg/l	Mo. Avg. / Daily Max.	40 CFR Part 423.15(a)(3)
O&G	15.0 / 20.0	mg/l	Mo. Avg. / Daily Max.	40 CFR Part 423.15(a)(3)
Free Available Chlorine	0.2 / 0.5	mg/l	Mo. Avg. / Daily Max.	40 CFR Part 423.15(a)(10)(i)
Total Chromium	0.2 / 0.2	mg/l	Mo. Avg. / Daily Max.	40 CFR Part 423.15(a)(10)(i)
Total Zinc	1.0 / 1.0	mg/l	Mo. Avg. / Daily Max.	40 CFR Part 423.15(a)(10)(i)
126 PP's contained in chemicals added for cooling tower maintenance except for Total Chromium and Total Zinc	Non-Detect/ Non-Detect	mg/l	Mo. Avg. / Daily Max.	40 CFR Part 423.15(a)(10)(i)
Free Available Chlorine or Total Residual Chlorine (TRC)	Narrative limit: Not > 2 hours per day and not more than 1 unit at a time unless demonstration of need	-	SBC Not Applicable	40 CFR Part 423.15(a)(13)(ii)
PCBs	Narrative limit: no discharge of PCBs such as those commonly used in transformer fluid	-	SBC Not Applicable	40 CFR Part 423.15(a)(2)

*The ELGs specifically allow that concentration limits can be imposed in the permit instead of mass load limits [40 CFR 423.15(a)(13)]. The previous permit did so and other permits in the State for steam electric generation power plants have consistently done so. The Department's Technical Guidance for Steam Electric Industry [362-2183-004] instructs permit writers to specify only concentration limits unless there is some site-specific reason where mass limits would be appropriate. It is noted here that electricity demand and drought controls affect this facility's operation such that flows (and mass loads) can vary substantially.

40 CFR Part 423.15 (a)(14) states: "in the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property controlled in paragraphs (a)(1) through (13) of this section attributable to each controlled waste source shall not exceed the specified limitation for that waste source." Because the low volume wastewater at the site is forwarded to the cooling tower for re-use as make-up water then discharged with the

cooling tower blowdown at outfall 001, the ELGs applicable to low volume wastewater are imposed at 001 rather than at an internal monitoring point. The previous permit also did not include an internal monitoring point.

The draft renewal permit incorporates the above ELGs which results in the following changes from the previous permit: 1) the Daily Maximum limits for Total Chromium and Total Zinc will be changed from 0.4 mg/l and 2.0 mg/l, respectively, in the previous permit; 2) the Daily Maximum limit for Oil and Grease will be changed from 30 mg/l in the previous permit; and 3) "Free Available Chlorine" will replace TRC. A review of the most recent three years of eDMRs indicates that the permittee will be able to achieve the new limits for Oil and Grease, Total Chromium, and Total Zinc. DEP has no sampling results from the facility for Free Available Chlorine but the permittee has been consistently meeting past TRC limits and other electric generating stations in the State have been able to consistently meet Free Available Chlorine limits based on the same ELGs.

The requirement that the 126 Priority Pollutants contained in chemicals added for cooling tower maintenance, except for Total Chromium and Total Zinc be 'Non-detect' is included as a narrative limit in the Part C Conditions. Per DEP's Technical Guidance for Development of NPDES Permit Requirements for Steam Electric Industry [362-2183-004], it is not necessary in every instance to require monitoring for Priority Pollutants (other than Chromium and Zinc) in cooling tower blowdown: a narrative condition can be imposed instead. DEP reviews chemical additives that permittees report using, including the Material Safety Data Sheets (MSDS's) for the chemical additives, ecotoxicity data, proposed usage rates, and engineering calculations which estimate concentrations in the discharge. The applicant has provided MSDS's for every proposed chemical additive in their application (14) and subsequent to the submittal of the application (6) and all of their chemical additives are on DEP's Approved List of Chemical Additives. All of the usage rates were reviewed and approved by DEP. See attached table. The permit includes language that any new chemical additive must also be approved by DEP and its usage rate approved by DEP. If a new chemical additive or a new usage rate causes concern, a permit amendment can be made to impose new limits or monitoring requirements. Besides the DEP's review of chemical additives, the application included discharge sampling results for Pollutant Groups 1-5, comprising 111 parameters (but not pesticides or radioactive parameters which would not be expected to be present for such an industrial discharger). Pollutant Groups 1-5 constitute a subset of the ELG's 126 Priority Pollutants. Those sampling results were used to determine if Reasonable Potential to cause an in-stream exceedance of water quality criteria exists. The evaluation is discussed in the WQBEL section of the Fact Sheet. 40 CFR 423.15(a)(10)(iii) of the ELGs allows:

> (iii) At the permitting authority's discretion, instead of the monitoring in 40 CFR 122.11(b), compliance with the standards for the 126 priority pollutants in paragraph (a)(10)(i) of this section may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.

As far as PCBs, the narrative limit from the ELGs has been incorporated in Part C of the draft renewal permit (for outfall 001) because the transformers should not be using fluids that contain PCBs: such fluids were taken out of general use. The control of PCBs from the site's discharge, moreover, is addressed by the requirements of the Schuylkill River PCBs Total Maximum Daily Load (TMDL), as discussed later in the Fact Sheet. It is recognized that a "Non-detect' result depends on the sensitivity of the analytical method used. The TMDL specifies a sensitive analytical method for Total PCBs.

Continued next page…..

Shown in the below table are **Non-ELG TBELs to be considered for applicability**. Unlike the ELG TBELs which are not discretionary, the below TBELs only need to be imposed when there is a Reasonable Potential that the discharge will exceed them.

Pollutant	Limit (mg/l)	SBC	State Regs.	DRBC Regs.
Dissolved Iron	7.0	Daily Maximum	Pa Code Ch. 95.2(4)	
pH	6-9	Instant. Min-IMAX	Pa Code Ch. 95.2	
Oil & Grease	15 / 30	Avg. Monthly/ IMAX	Pa Code Ch. 95.2	
Temperature	Not causing more than 2°F change from ambient stream temp over 1-hour period and not causing exceedance of criteria		Pa Code Ch. 96.6	
Total Dissolved Solids	2000, if existing discharges increase loading by >5000 lbs/day unless variance granted	Average Monthly	Pa Code Ch. 95.10(c)	
Total Phosphorus	2, when phosphorus in dischg contributes to or threatens to impair uses in flowing surface water	Average Monthly	Pa Code Chapter 96.5(c)	
Total Residual Chlorine (TRC)	0.5, only where no ELG limit applies for either TRC or Free Available Chlorine	Average Monthly	Pa Code Chapter 92a.48	
Ammonia – N	20	Average Monthly		18 CFR Part 410, 4.30.5.D.
Temperature	Not causing stream temp >87°F and/or >5°Fover daily avg stream temp outside allowed heat dissipation area, nor causing fish mortality			18 CFR Part 410, 4.30.6.B and 7. and Docket D-20000-14
Temperature	Heat Dissipation area shall not be > 1000 ft long nor > 1/2 of the width of the stream			18 CFR Part 410 4.30.6.F.5
Temperature	Heat Dissipation area defined as 200 ft downstream and 60 ft wide			Docket D-2000-14
Temperature	110°F	Instant. Maximum		Docket D-2000-14
Total Dissolved Solids	2400 / 3000	Avg. Monthly / Daily Maximum		Docket D-2000-14
Total Suspended Solids	100	Average Monthly		18 CFR Part 410, 3.10.4.D.

Dissolved Iron:

The three discharge sampling results in the permit application indicated an average concentration of 0.023 mg/l and a maximum concentration of 0.032 mg/l. These results do not indicate a reasonable potential to exceed the TBEL of 7.0 mg/l. Therefore, this permit limit has not been included in the draft renewal permit.

pH:

Limits for pH were already required by the ELGs and are in the previous permit.

Oil and Grease:

More stringent limits for Oil and Grease are required by the ELGs and have been included in the draft renewal permit.

Temperature:

The previous permit included a Temperature limit of 110°F as an Instantaneous Maximum in the Part C Conditions and a daily monitoring requirement in the Part A limits table whereas this draft renewal permit moves the limit to the Part A limits table, consistent with other permits and to maximize the eDMR reporting system for compliance purposes. The Temperature limitation of 110 °F is intended for the protection of human health in accordance with the Department's Temperature guidance. The discharge data reported in the eDMR system indicates the facility is able to meet the limit of 110°F as an Instantaneous Maximum.

A narrative limit for has been included in the Part C Conditions for not causing an in-stream temperature change greater than 2°F aver a 1-hour period, consistent with the permits for other Steam Electric Generating Stations.

As with the previous permit, a narrative limit has also been included in the Part C Conditions for not causing an in-stream temperature change greater than 5 °F nor causing the stream temperature to exceed 87°F, outside of an allowed heat dissipation area, to satisfy the DRBC requirements. The previous permit's Part C condition was changed in that the allowed heat dissipation area is consistent with the DRBC regulations rather than the docket. The docket was issued in 2000 based on the results of a thermal model that assumed a discharge of 0.35 MGD. The thermal model and the docket may be outdated.

DEP's Standard Operating Procedure (SOP) for New and Reissuance Industrial Waste and Industrial Stormwater Individual NPDES Permits provides:

8. The application manager may establish in-stream monitoring where data are determined to be important for verifying the assumptions of water quality modeling or that regulatory requirements will be achieved, including but not limited to temperature.

In-stream monitoring for Temperature was not required in the previous permit or in the draft renewal, given the DMR data for Temperature.

DEP's thermal model/Excel spreadsheet was used to achieve the State's regulatory standards and to achieve in-stream water quality criteria. It is discussed in the WQBEL section of the Fact Sheet.

Total Dissolved Solids (TDS):

The previous permit established a TDS monthly average limit of 2400 mg/l. The existing mass loading allowed is thus: 2400 mg/l x 0.35 MGD x 8.345 c.f. = 7010 lbs/day. With a design flow of 0.4 MGD, the mass loading would increase to 8011 lbs/day. This increase of approximately 1000 lbs/day is less than 5000 lbs/day such that the 2000 mg/l TDS limit is not applicable.

DRBC previously evaluated the discharger's request for a TDS monthly average limit greater than 1000 mg/l, the effluent limit per 3.10.4.D. of their Water Quality Standards [18 CFR Part 410]. The request was granted: 2400 mg/l with a design discharge flow of 0.35 MGD was determined by DRBC to not exceed their standards in 18 CFR Part 410. Using a design flow of 0.4 mg/l seems to also not cause an in-stream TDS concentration exceeding 500 mg/l or 133% above background, whichever is lesser:

CsQs + CdQd = CtQt, where…

Cs = Background TDS concentration cited in DRBC's 2016 DRBC docket for GenOn, D-1987-026-CP4, RMI 71.3 of Schuylkill River) and 2017 docket for Cambridge Lee, D-1970-120-3, RMI 86.5 on Schuylkill River = 370 mg/l;
Qs = harmonic flow of Schuylkill River per PA StreamStats = 523 cfs
Cd = discharge concentration = 2400 mg/l as a monthly average
Qd = discharge design flow = 0.4 MGD = 0.62 cfs
Ct must be < 500 mg/l and/or < 133% of Cs (370 mg/l * 133% = 492.1 mg/l)
Qt = Qs + Qd = 523 + 0.62 = 523.62 cfs

(370 mg/l * 523 cfs) + (2400 mg/l * 0.62 cfs) = Ct * 523.62 cfs
Ct = 372.4 mg/l which is less than 492.1 mg/l (and 500 mg/l)

In the dockets D-1987-026-CP4 and D-1970-120-3, DRBC used Q7-10 for Qs rather than harmonic flow:

CsQs + CdQd = CtQt
(370 mg/l * 150 cfs) + (2400 mg/l * 0.62 cfs) = Ct * 150.62 cfs
Ct = 378.4 mg/l which is less than 492.1 (and 500 mg/l)

The same TDS concentration limits of 2400 mg/l as a Monthly Average and 3000 mg/l as Daily Maximum have therefore been carried over into the draft renewal permit. As with the previous permit, no mass load limits were included.

Total Phosphorus:

Pa Code Chapter 96.5(c) stipulates that this TBEL is only to be imposed for waterways that are impaired due to high concentrations of phosphorus. The Schuylkill River at this location and downstream has not been assessed as impaired due to phosphorus or other nutrients. This TBEL is not applicable.

Total Residual Chlorine (TRC):

It is not necessary to impose TBELs for TRC when the ELGs already require limits for Free Available Chlorine.

Title 25 PA Code 92a.48(b) provides "For facilities where the EPA has not promulgated a National ELG setting forth limits for TRC or free available chlorine for an industry or activity, and the Department has not developed a facility-specific BAT effluent limitation for TRC under the factors in paragraph (1), an effluent limitation for TRC of 0.5 milligrams per liter (30-day average) constitutes BAT."

If a calculated WQBEL for TRC was more stringent than the TBEL, it could be imposed. Such was not the case.

Ammonia:

The maximum concentration for discharge samples reported in the application for Ammonia was 0.14 mg/l, less than 10% of the TBEL of 20.0 mg/l and indicating no Reasonable Potential to exceed the TBEL. The ELGs did not include Ammonia. No Ammonia limit was included in the previous permit and no Ammonia limit has been included in the draft renewal permit.

Total Suspended Solids:

The ELG limit for Monthly Average TSS is more stringent than the limit from the DRBC regulations and has been imposed in the draft renewal permit. The Daily Maximum and Instantaneous Maximum TSS limits from the previous permit have been carried forward (and constitute TBELs based on Best Professional Judgement, BPJ): past eDMRs indicate that the TSS limits are being consistently met. In the three years of DMR data reviewed, there was only one month for which there was a TSS concentration greater than the Daily Maximum limit of 60.0 mg/l.

TBELs/BPJs would also be developed and considered for any parameter that showed a reasonable potential to cause an exceedance of an in-stream water quality criteria but for which ELGs or regulations did not provide a TBEL. Such is not the case.

Water Quality-Based Effluent Limits (WQBELs)

BOD5 and Ammonia:

Because the discharge concentrations in their application (and expected for their industrial activity) were low for BOD5 and Ammonia, the DEP's WQM 7.0 model was not used consistent with the DEP's SOP Establishing Effluent Limitations for Individual Industrial Permits. The application reported a maximum concentration of 5.8 mg/l for BOD5 and a maximum concentration of 0.14 mg/l for Ammonia in the discharge at outfall 001. The previous permit also did not include limits for BOD or Ammonia (or Dissolved Oxygen).

TRC:

To determine if a WQBEL for TRC should be considered, the DEP's TRC model was used. Model inputs included a design discharge flow of 0.4 MGD and a stream low-flow of 150 cfs, the Q7-10. The model defaulted to the TBEL of 0.5 mg/l as a monthly average, indicating that the TBEL is sufficiently protective of the receiving water's uses. Calculations and a description of the TRC model can be found in DEP's Technical Guidance 391-2000-015. Because no more stringent WQBEL was recommended by the model, the TBELs for Free Available Chlorine due to ELGs will be imposed rather than TRC as already discussed.

Temperature:

DEP used the Thermal Discharge Limit Calculation Spreadsheet to evaluate the thermal impact of this discharge to the Schuylkill River. The spreadsheet/model is designed to calculate the appropriate thermal discharge limits for a facility discharging effluent above ambient temperature, considering the estimated partial mix between the discharge flow and the receiving stream's background temperature and flow month-by-month. It incorporates DEP's Implementation Guidance Temperature Criteria [391-2000-017]. The design stream flow for temperature analysis is based on the Q_{7-10} flow of the receiving stream, as adjusted for each monthly or semimonthly time period using multipliers based on historic data. The design discharge flow used was 0.4 MGD. The closest stream monitoring for Temperature is at the WQN 113 station upstream on the Schuylkill River at Berne. The past 10 years of stream temperature data at WQN113 was used as "background". The model results (and inputs) are attached to this Fact Sheet. The model indicated that no discharge temperature limit more stringent than 110°F is needed to protect the river. The same result was obtained whether using the average of the monthly stream temperatures or the median of the monthly stream temperatures as model inputs, and whether using the acute PMF of 0.2 from the PENTOX model simulation or the estimated PMF of 0.33 that has been used in past permits for discharges to the Schuylkill River.

The monitoring data indicates the facility is consistently under 110°F (i.e. no Reasonable Potential to cause an exceedance of the limit and in this case the Temperature water quality criteria). However, the monitoring requirement and limit should nevertheless continue to be included to ensure that the cooling tower is used and is effective. (The same Temperature limit has been imposed for other Steam Electric Generating Stations.)

Toxics:

Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic pollutants in a discharge whenever there is a reasonable potential for those pollutants to cause an in-stream exceedance of surface water quality criteria downstream of the discharge. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, were greater than the most stringent water quality criteria were considered "pollutants of concern". Calculations used in DEP's PENTOX model were based on Water Quality Toxics Management Strategy [361-0100-003] and Determining WQBELs [391-2000-003]. The model is described in Technical Guidance 391-2000-011. The model simulation pages are attached. Note: DEP has recently replaced PENTOX, an Access-based software, with an Excel version titled Toxics Management Spreadsheet (TMS). The logic and calculations were transferred.

The historic data from the upstream WQN 113 station were used for the input value for stream Hardness in the TMS; the monitoring results used from the WQN 113 data match the design stream low-flow period of July, August, September covering 10 years. The discharge average Hardness was taken from the application. The River width and depth were estimates carried over from other permits' Fact Sheets for Schuylkill River and confirmed as reasonable estimates from DEP's eMapPA. The design discharge flow used was 0.4 MGD. The Low Flow Yield and Drainage area model inputs were from PA Stream Stats information. The model calculates the Q_{7-10} flow from those inputs and then estimates the Q_{1-10} flow, the Q_{30-10} flow, and the harmonic flow from the Q_{7-10} flow and applies the appropriate river flow in its calculations. The Technical Support Document for Water Quality-Based Toxics Control (TSD) (EPA, 1991) and the Pennsylvania Water Quality Standards (PA WQS) recommend the flow conditions for use in calculating WQBELs using steady-state modeling: they state that WQBELs intended to protect aquatic life uses should be based on the lowest seven-day average flow rate expected to occur once every ten years (Q_{7-10}) for chronic criteria and the lowest one-day average flow rate expected to occur once every ten years (Q_{1-10}) for acute criteria. For a CRL criteria (carcinogen), the WQBEL is calculated based on the harmonic flow of the receiving water and lifetime exposure of the parameter. The model performs all calculations, compares each resultant WQBEL based on each criterion, and then determines the most stringent WQBEL which is shown on the result pages.

There were no parameters for which maximum *detected* concentrations exceeded the WQBELs calculated by the TMS model. The parameters for which maximum *detected* concentrations approached the WQBELs such that a monitoring requirement is recommended were as follows:

Parameter	Most Stringent WQBEL (mg/l)	Model	Maximum Discharge Conc. (mg/l)		Recommendation
Total Copper	0.60	TMS/PENTOX	0.083	14% of WQBEL	Monitoring requirement when discharge conc.> 10%; establish limit when discharge conc.≥ 50%

DEP's SOP for Establishing WQBELs and Permit Conditions for Toxic Pollutants in NPDES Permits outlines how Reasonable Potential Analysis is performed and when limits or monitoring requirements are imposed in permits. For example, when there are less than 10 sampling results and the maximum concentration in the discharge is more than 50% of the calculated WQBEL, a limit would generally be imposed. For a conservative pollutant, a maximum concentration in the discharge that is more than 10% of the WQBEL generally triggers a monitoring requirement in the permit. For a non-conservative pollutant, a maximum concentration in the discharge that is more than 25% of the WQBEL generally triggers a monitoring requirement in the permit.

Because information is being collected to determine reasonable potential, the monitoring frequency for Copper does not need to match the monitoring frequencies recommended in Table 6-4 of DEP's Technical Guidance for Development and Specification of Effluent Limitations (362-0400-001) whose purpose is to demonstrate compliance with a limit. Monthly monitoring has instead been imposed. Because the water quality criteria for Copper (effecting the calculation of WQBELs) is hardness-dependent, it is also recommended that the permittee conduct discharge hardness analysis and upstream hardness as well. (This additional sampling can be attached to the eDMRs and included in the next renewal permit application.) The following footnote to the Part A limits table has been included in the draft renewal permit:

> "The collection and analysis of upstream Hardness samples (beyond the influence of the discharge location) and discharge Hardness samples are recommended when discharge samples for Total Copper are collected and analyzed (because the water quality criteria for Total Copper is Hardness-dependent)."

DEP's TMS model recommended limits for two parameters even though they were **not detected** in discharge sampling: Dibenzo(a,h)Anthracene and 3,3-Dichlorobenzidene. The model recommendations consider the quantitative levels used in analyses but do not take into consideration whether a parameter was detected or not detected. The model recommended limits based on the fact that DEP's Target Quantitation Levels (TQLs) were not used in the discharge sampling reported in the application. However, (a) the Quantitation Levels used by the permittee's lab for these parameters were each under the calculated WQBELs; (b) three out of three discharge samples using Method 625 did not detect the presence of these parameters; (c) these parameters were not identified in the ELG (the only ELG limits for any Base Neutral compounds was 'ND' for Priority Pollutants in cooling tower maintenance chemicals; (d) the permittee submitted MSDS's for their cooling tower maintenance chemicals and other chemical additives and these parameters were not noted in the MSDS's. For these reasons, no monitoring requirements (or limits) have been added to the draft renewal permit for these two parameters.

[Staff have been instructed to use the TMS. The latest version of the TMS was dated 10/1/2020; it included the same water quality criteria as the original TMS used for this fact sheet with results attached.]

Total Maximum Daily Load (TMDL): Schuylkill River PCB TMDL

The permittee requested in a previous petition and in their permit renewal application that the Polychlorinated Biphenyl (PCB) monitoring be eliminated from their permit. The reported concentrations of PCBs in 001's discharge, however, have consistently been over the TMDL target of 44 pg/l. See the attached table for PCB sampling data. The average concentration for the period 2011 through 2019 was 29,947 pg/l for Total PCBs (all 209 congeners combined), after subtracting the higher of the method blank or the field blank concentration from the effluent concentration for each sample where that data was available and after subtracting the concentration in the influent when those samples were collected. Using daily flows when the samples were collected would yield an estimated mass loading of 0.000078 lb/day (the equivalent of 0.035 grams/day). Only using the most recent years' data would not change the conclusion: the concentrations remained above the target concentration of 44 pg/l. Between 2016 and 2019, inclusive, the average PCB

concentration reported during Dry weather conditions was 99,254 pg/l and the average PCB concentration reported during Wet weather conditions was 20,155 pg/l.

The applicant contended that the only source of PCBs in the discharge was from the raw water supply. But the permittee collected and analyzed six samples of the site's influent water during 2011-2013. The corresponding effluent sample concentrations were greater than the influent samples six out of six times. The largest difference was 11,700 pg/l in the effluent and 305 pg/l in the influent on the same day during 2012. See the attached table.

In their renewal application, the applicant contended that the facility's discharge of PCBs was less than the Waste Load Allocation (WLA) for their segment of the Schuylkill River. The facility discharges to Segment C of the Schuylkill River. The TMDL (Table 5-1 and Table ES-1) assigned a WLA for all point sources combined (MS4's and others) in Segment C of 0.0181 grams/day. The TMDL (Table 5-4) assigned a WLA for all non-MS4 point sources combined of 0.0113 grams/day. The attached sampling data and flows indicate an average of 0.035 grams/day of PCBs discharged from the Ontelaunee Power Plant, greater than the WLA for all point sources discharging to Segment C.

The applicant contended that this facility was not assigned a facility-specific WLA because they were a minor discharger. EPA stated in the response to comments on the TMDL, that they disagreed with a proposal to not include minor dischargers. They included point sources believed to have the potential to discharge PCBs at concentrations of concern. Table 3-1 of the TMDL included dischargers with flows as low as 0.001 MGD, less than Ontelaunee's discharge flow. The first round of discharge monitoring for PCBs was specifically intended to determine if more point sources were discharging PCBs than those included in the TMDL's Table 3-1 since such data was not available at the time of the 2007 TMDL development. In EPA's response to comments on the 2007 TMDL, they stated "Unless monitoring results can show that these [minor] dischargers do not contribute PCBs loads to the Schuylkill River, they are addressed by the WLA portion of the TMDL."

By regulation, NPDES point sources cannot cause or contribute to an exceedance of applicable water quality standards. The TMDL assigned a target concentration of 44 pg/l to each identified point source during its development. Not all point sources in existence were identified in the TMDL, nor were sampling data from the point sources available to calculate accurate loads to the River or to segments of the River. Many facilities' monitoring data since the final TMDL was approved by EPA in 2007 have shown discharge concentrations greater than 44 pg/l. Given that the Schuylkill River is known to be contaminated for PCBs which caused it to be listed on the 303(d) list of impaired waters and that this facility's discharges are consistently greater than the target of 44 pg/l, the request to eliminate PCB monitoring is denied.

In accordance with the Schuylkill River PCB TMDL which allowed non-numeric permit limitations, monitoring will continue to be required as will the preparation and implementation of a Pollutant Minimization Plan (PMP) in order to reduce future PCB loading to the Schuylkill River. The PMP must be submitted and approved by the DEP followed by Annual Progress Reports. PCB monitoring at oufall 001 will track progress. All PCB monitoring using the sensitive detection method of 1668A or an equivalent will also be useful for informing a future revision of this TMDL. DEP notes that PCB concentrations in the Schuylkill River impact the downstream Delaware River, which is also impaired for fish consumption and for which a separate TMDL for PCBs was developed.

Flow Monitoring:

Monitoring of effluent flow volume required in the existing permit will be continued per 40 CFR § 122.44(i)(1)(ii).

Nutrient Monitoring:

Because the receiving water has not been assessed as impaired for nutrients, no limits for Total Nitrogen (TN) or Total Phosphorus (TP) have been included, but a monitoring requirement has been added for TN. DEP's SOP Establishing Effluent Limitations for Individual Industrial Permits recommends a monitoring requirement, at the least, for industrial facilities that discharge TN in excess of 75 lbs/day or Total Phosphorus TP in excess of 25 lbs/day. The maximum concentration reported in their application for TKN was 2.46 mg/l and for NO3-NO2 was 28.7 mg/l, yielding a mass load of 104 lbs/day potentially ((2.46 + 28.7 mg/l) * 0.4 MGD * 8.34 c.f.). Note: if the average concentrations were used instead of the maximum concentrations reported in the application, the TN mass load would still be over 75 lbs/day. The maximum concentration reported in their application for TP was 5.2 mg/l, yielding a mass load of 17.3 lbs/day. No monitoring requirement has been added for TP.

(The discharge is located outside of the Chesapeake Bay watershed and is therefore not subject to those requirements for nutrient reduction.)

Mass Load Limits:

The limits based on ELGs do not include mass load limits as previously discussed. Permit limits are also imposed for Temperature and TDS. Mass load limits are not applicable for Temperature. The past permit did not have mass load limits for TDS and the draft renewal permit does not either, given that the discharge varies based on demand for electricity and drought controls.

Monitoring Frequencies and Sample Types:

Monitoring frequencies and sample types are consistent with Table 6-4 of DEP's Technical Guidance for Development and Specification of Effluent Limitations (362-0400-001) or carried forward from the previous permit, consistent with DEP's SOP for New and Reissuance Individual Industrial Wastewater NPDES Permits.

DEVELOPMENT OF EFFLUENT LIMITS FOR OUTFALL 002

This permit provides coverage for 'industrial stormwater associated with industrial activity' in accordance with 92a.2 and 92a.32 which incorporate federal regulations. The stormwater leaving the site via outfall 002 is discharging to a municipal storm sewer system. The previous permit also included stormwater discharged to outfall 002 but did not require any monitoring or Best Management Practices (BMPs) or a Pollution Prevention and Containment Plan. Outfall 002 drains 535,788 ft^2 per the application but only discharges intermittently; most of their stormwater is collected and re-used on site.

Consistent with Appendix H for Steam Electric Generating Facilities of the DEP's general permit for industrial stormwater discharges, PAG-03, a monitoring requirement has been added to the permit for pH, TSS, Oil and Grease, and Iron. The monitoring frequency is twice per year consistent with the recommendation of DEP's SOP for Establishing Effluent Limitations for Individual Industrial Permits. Other requirements included in the draft renewal permit are as follows: 1) a Stormwater Pollution Prevention and Containment Plan (PPC) must be kept up-to-date; 2) Best Management Practices must be used to prevent the stormwater from being exposed to pollutants; 3) an annual inspection of the outfall is required and must be documented.

OTHER

Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

303(d) Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. Section 303(d) of the Clean Water Act requires the assessment of streams and other surface waters and the reporting to EPA of impaired waters. Total Maximum Daily Loads are then prepared to address each impaired waterway. In this case, the impairment is due to the presence of elevated PCB concentrations found in fish tissues in the Schuylkill River. The Schuylkill River PCB TMDL was completed and approved by EPA in April 2007. Implementation of the TMDL has already been discussed under the TMDL section of this factsheet. This permit is in conformance with the TMDL.

Anti-Backsliding

No limits in the draft renewal permit are less stringent than in the previous permit.

Antidegradation (Chapter 93.4)

The effluent limits for this discharge have been developed to ensure that existing stream uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality (HQ) or Exceptional Value (EV) waters are impacted by this discharge.

Whole Effluent Toxicity (WET)

Toxicity testing was not required in the previous permit nor in the draft renewal. WET testing is required for major sewage dischargers, sewage dischargers with EPA-approved pretreatment requirements, and select other dischargers where deemed appropriate.

Chemical Additives

The Chemical Additive requirements, standard to all industrial NPDES permits using or expected to use chemical additives, has changed from the previous permit. The 14 chemical additives listed in the application have been augmented by six chemical additives for which the permittee obtained approval from DEP between 2014 and the present. The Environmental Manager at Ontelaunee Power confirmed in the September 1, 2020 phone conversation that there were no other chemical additives in use. The DEP database has been updated to reflect approval of proposed usage rates for these chemicals based on a design flow of 0.4 MGD at outfall 001. A Supplemental DMR form for Chemical Additive Usage must be submitted each month in the eDMR system. (For certain chemicals, the permit limits for pH and Free Available Chlorine are sufficient controls rather than maximum usage rates and Notification forms: Sulfuric Acid, Sodium Hydroxide, Sodium Hypochlorite, Sodium Bisulfite.)

NPDES permits no longer list the chemical additives already approved by DEP for use at sites. For purposes of documentation, there is an attachment to this Fact Sheet that lists all of the chemical additives that have already been approved by DEP for this facility along with the calculated WQBELs and the maximum usage rates allowed, as applicable. Any “chemical additives”, as defined in the permit and the SOP for Chemical Additives, that are proposed going forward will need to follow the renewal permit’s requirements in the Part C Conditions for Chemical Additives: the chemical additive must be on DEP’s Approved List of Chemical Additives (downloadable from www.dep.pa.gov, Search ‘Chemical Additives’) and a Notification Form must be submitted with the maximum usage rate. If an increased usage rate is proposed for a previously approved chemical additive, a Notification Form is also required. If the proposed maximum usage rate is larger than the allowable usage rate calculated from the WQBEL, engineering calculations or other means of demonstrating that the concentration in the discharge will not exceed the calculated WQBEL will need to be forwarded along with the Notification Form.

CHANGES FROM PREVIOUS PERMIT:

-Temperature IMAX limit of 110ºF was moved from Part C to the Part A Limits Table for outfall 001, consistent with other NPDES permits for Electric Generating Power Stations;

- Free Available Chlorine limits have replaced TRC limits at outfall 001 to be consistent with ELGs;

-The Daily Maximum limits for Oil and Grease, Total Chromium, and Total Zinc at outfall 001 have been changed to match the ELGs;

-A requirement to monitor for Total Copper at outfall 001 has been added as well as a footnote recommending that upstream hardness and discharge hardness be sampled and analyzed at the same time as the Copper discharge sample and reported to DEP;

-A monitoring requirement for Total Nitrogen (and its components TKN, NO_3, and NO_2) has been added at outfall 001;

-A requirement has been added to submit to DEP a PCB Pollutant Minimization Plan for outfall 001 and then initiate implementation of the Plan after DEP approval;

-A requirement was added to the limits table to submit a Non-Compliance Supplemental DMR form and to collect a grab sample at outfall 001 for analysis and submit the results to DEP if an emergency valve is opened to allow the oil/water separator's miscellaneous wastewater to be diverted from the cooling tower and discharge directly to outfall 001;

-A condition was added to Part C to label the valve which allows the oil/water separator wastewater to be diverted around the cooling tower 'for emergency use only', to include instructions in facility operating procedures to keep the valve closed except in emergency conditions, and to collect grab samples at outfall 001 if it is opened;

-Chemical Additive requirements were added as with most industrial permits;

-Monitoring requirements, Best Management Practices requirements, maintaining a PPC Plan, and a requirement for an annual outfall inspection and annual report have been added for the stormwater outfall 002;

-decimal points and significant digits have been added to some limits by new DEP software by default;

-changes in NPDES permit standard language, applicable to all permits.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality, as needed, and BPJ. Instantaneous Maximum (IMAX) limits may be determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/day	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/week	Grab
Free Available Chlorine	XXX	XXX	XXX	0.2	0.5	0.5	1/day	Grab
Temperature (ºF)	XXX	XXX	XXX	XXX	110	XXX	1/day	I-S
TSS	Report	Report	XXX	30.0	60.0	75	1/week	24-Hr Composite
Total Dissolved Solids	Report	Report	XXX	2400	3000	3000	1/week	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	15.0	20.0	20	1/week	Grab
Total Chromium	Report	Report	XXX	0.20	0.20	0.5	1/week	24-Hr Composite
Total Copper (1)	Report	Report	XXX	Report	Report	XXX	1/month	24-Hr Composite
Total Zinc	Report	Report	XXX	1.0	1.0	2.5	1/week	24-Hr Composite
TKN – N	Report Avg. Quarterly	XXX	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	24-Hr Composite
NO2 – N	Report Avg. Quarterly	XXX	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	24-Hr Composite
NO3 - N	Report Avg. Quarterly	XXX	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	24-Hr Composite
Total Nitrogen (2)	Report Avg. Quarterly	XXX	XXX	Report Avg. Quarterly	XXX	XXX	1/quarter	Calculated

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day)		Concentrations (mg/L)				Minimum Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
PCBs (Dry Weather) (3)	XXX	Report	XXX	XXX	Report	XXX	1/year	24-Hr Composite
PCBs (Wet Weather) (3)	XXX	Report	XXX	XXX	Report	XXX	1/year	24-Hr Composite

(1) The collection and analysis of upstream Hardness samples and discharge Hardness samples are recommended when discharge samples for Total Copper are collected analyzed (because the water quality criteria for Total Copper and resultant limits are Hardness-dependent). Any Hardness sample results should be labeled and attached to the DMRs for the same reporting period and included in the next permit renewal application.

(2)Total Nitrogen is calculated as TKN + NO2 + NO3.

(3) See Part C Conditions for specific PCB monitoring and analysis requirements.

Compliance Sampling Location: at discharge from the facility

Other:

-**The permit does not authorize wastewater from the oil/water separator to be diverted around the cooling tower via an open valve and discharge directly, as the only waste stream, to outfall 001**. If such an emergency discharge occurs, a) it must be reported on the Non-Compliance Supplemental DMR form with an explanation and b) a grab sample of the discharge at outfall 001 for the day of this occurrence must be analyzed for Pollutant Groups 1-5 as listed in DEP's NPDES Individual Industrial Wastewater permit application instructions (downloadable from www.dep.pa.gov) with the sample results submitted within one week of receipt to the office who issued this permit: DEP's Clean Water Permits Program, Southcentral Regional Office. Depending upon the sample results, the DEP may initiate a permit amendment and/or rescind approval of the maximum usage rates of certain chemical additives.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality, as needed, and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	2/year	Grab

Compliance Sampling Location: Outfall 002 (before stormwater leaves site)

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	PENTOXSD for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet/Model - Excel (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☒	Temperature Model Spreadsheet (see Attachment)
☒	Toxics Screening Analysis Spreadsheet (see Attachment)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☒	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☒	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☒	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☒	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☒	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☒	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	DEP SOP: Establishing Effluent Limitations for Individual Industrial Permits, ~~9/10/2013~~. 10/1/2020.
☒	DEP SOP: Chemical Additives, 1/13/2015.
☒	DEP SOP: New and Reissuance Industrial Waste and Industrial Stormwater Individual NPDES Permit Applications, 10/11/2013.
☒	DEP's SOP for Establishing WQBELs and Permit Conditions for Toxic Pollutants in NPDES Permits, ~~7/30/2019~~ 10/1/2020
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