

National Pollutant Discharge Elimination System (NPDES) Permit Program

FACT SHEET

Regarding a Modification to an NPDES Permit To Discharge to Waters of the State of Ohio
for **Dynegy Hanging Rock II LLC**

Public Notice No.: 15-04-066
Public Notice Date: April 30, 2015
Comment Period Ends: May 30, 2015

Ohio EPA Permit No.: **0IB00032*FD**
Application No.: **OH0127931**

Name and Address of Applicant:
Dynegy Hanging Rock II LLC
1395 County Road 1A
Ironton, Ohio 45638

Name and Address of Facility Where
Discharge Occurs:
Dynegy Hanging Rock II LLC
1395 County Road 1A
Ironton, Ohio 45638
Lawrence County

Receiving Water: **Ohio River**

Subsequent
Stream Network: N/A

Introduction

Development of a Fact Sheet for NPDES permits is mandated by Title 40 of the Code of Federal Regulations (CFR), Section 124.8 and 124.56. This document fulfills the requirements established in those regulations by providing the information necessary to inform the public of actions proposed by the Ohio Environmental Protection Agency (Ohio EPA), as well as the methods by which the public can participate in the process of finalizing those actions.

This Fact Sheet is prepared in order to document the technical basis and risk management decisions that are considered in the determination of water quality based NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, instream biological, chemical and physical conditions, and the relative risk of alternative effluent limitations. This Fact Sheet details the discretionary decision-making process empowered to the Director by the Clean Water Act and Ohio Water Pollution Control Law (Ohio Revised Code [ORC] 6111). Decisions to award variances to Water Quality Standards (WQS) or promulgated effluent guidelines for economic or technological reasons will also be justified in the Fact Sheet where necessary.

No antidegradation review was required.

Procedures for Participation in the Formulation of Final Determinations

The proposed modification is tentative but shall become final on the effective date unless (1) an adjudication hearing is requested, (2) the Director withdraws and revises the proposed modification after consideration of the record of a public meeting or written comments, or (3) upon disapproval by the Administrator of the U.S. Environmental Protection Agency.

Within thirty (30) days of publication of this notice, any person may submit written comments, a statement as to why the proposed modification should be changed, a request for a public meeting on the proposed modification and/or a request for notice of further actions concerning the modification. All communications timely received will be considered in the final formulation of the modification. If significant public interest is shown a public meeting will be held prior to finalization of the modification.

Within thirty (30) days of the issuance of the proposed modification any officer of an agency of the state or of a political subdivision, acting in his representative capacity or any person aggrieved or adversely affected by issuance of it may request an adjudication hearing by submitting a written objection in accordance with ORC Section 3745.07. Since all other conditions of the permit remain in effect, a hearing may not be requested on any issues other than the proposed modification. If an adjudication hearing is requested, the existing NPDES permit will remain in effect until the hearing is resolved. Following the finalization of the modification by the Director, any person who was a party to an adjudication hearing may appeal to the Environmental Review Appeals Commission.

Requests for public meetings shall be in writing and shall state the action of the Director objected to, the questions to be considered, and the reasons the action is contested. Such requests should be addressed to:

**Legal Records Section
Ohio Environmental Protection Agency
Lazarus Government Center
P.O. Box 1049
Columbus, Ohio 43216-1049**

Interested persons are invited to submit written comments upon the proposed modification. Comments should be submitted in person or by mail no later than 30 days after the date of this Public Notice. Deliver or mail all comments to:

**Ohio Environmental Protection Agency
Attention: Division of Surface Water
Permits and Compliance Section
Lazarus Government Center
P.O. Box 1049
Columbus, Ohio 43216-1049**

The Ohio EPA permit number and Public Notice numbers should appear on each page of any submitted comments. All comments received no later than 30 days after the date of the Public Notice will be considered.

Citizens may conduct file reviews regarding specific companies or sites. Appointments are necessary to conduct file reviews, because requests to review files have increased dramatically in recent years. The first 250 pages copied are free. For requests to copy more than 250 pages, there is a five-cent charge for each page copied. Payment is required by check or money order, made payable to Treasurer State of Ohio.

For additional information about this fact sheet or the proposed modification, contact Jack Knapp at (740) 380-5268, Jack.Knapp@epa.ohio.gov or Eric Nygaard, (614) 644-2024, Eric.Nygaard@epa.ohio.gov.

Information Regarding Certain Water Quality Based Effluent Limits

This draft permit may contain proposed water quality based effluent limitations for parameters that **are not** priority pollutants. (See the following link for a list of the priority pollutants:

http://epa.ohio.gov/portals/35/pretreatment/Pretreatment_Program_Priority_Pollutant_Detection_Limits.pdf .)

In accordance with ORC Section 6111.03(J)(3), the Director established these water quality based effluent limits after considering, to the extent consistent with the Federal Water Pollution Control Act, evidence relating to the technical feasibility and economic reasonableness of removing the polluting properties from those wastes and to evidence relating to conditions calculated to result from that action and their relation to benefits to the people of the state and to accomplishment of the purposes of this chapter. This determination was made based on data and information available at the time the permit was drafted, which included the contents of the timely submitted NPDES permit renewal application, along with any and all pertinent information available to the Director.

This public notice allows the permittee to provide to the Director for consideration during this public comment period additional site-specific pertinent and factual information with respect to the technical feasibility and economic reasonableness for achieving compliance with the proposed final effluent limitations for these parameters. The permittee shall deliver or mail this information to:

**Ohio Environmental Protection Agency
Attention: Division of Surface Water
Permits Processing Unit
P.O. Box 1049
Columbus, Ohio 43216-1049**

Should the applicant need additional time to review, obtain or develop site-specific pertinent and factual information with respect to the technical feasibility and economic reasonableness of achieving compliance with these limitations, written notification for any additional time shall be sent to the above address no later than 30 days after the Public Notice Date on Page 1.

Should the applicant determine that compliance with the proposed water quality based effluent limitations for parameters other than the priority pollutants is technically and/or economically unattainable, the permittee may submit an application for a variance to the applicable water quality standard(s) used to develop the proposed effluent limitation in accordance with the terms and conditions set forth in OAC 3745-33-07(D). The permittee shall submit this application to the above address no later than 30 days after the Public Notice Date.

Alternately, the applicant may propose the development of site-specific water quality standard(s) pursuant to OAC 3745-1-35. The permittee shall submit written notification regarding their intent to develop site specific water quality standards for parameters that are not priority pollutants to the above address no later than 30 days after the Public Notice Date.

Location of Discharge/Receiving Water Use Classification

The Hanging Rock Energy Facility discharges the Ohio River at Ohio Mile Point 333. Figure 1 shows the approximate location of the facility.

This segment of the Ohio River is described by Ohio EPA River Code: 25-300, U.S. EPA River Reach #: 05090103-033, County: Lawrence, Ecoregion: Western Allegheny Plateau. The Ohio River is designated for the following uses under Ohio's WQS (OAC 3745-1-32): Warmwater Habitat (WWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS), Public Water Supply (PWS), and Bathing Waters (BW).

Facility Description

The Hanging Rock Energy Facility is a natural gas-fired steam electric generating station capable of generating 1240 megawatts. The process operations performed at this facility are classified by the Standard Industrial Classification code 4911 – Electric Services, Steam Electric Power Plants. Discharges resulting from process operations are therefore subject to Federal Effluent Guideline Limitations, continued in Chapter 40 of the CFR, Part 423, “Steam Electric Power Generating” Industrial Category.

Description of Existing Discharge

The Hanging Rock Energy Facility discharges from one final outfall into the Ohio River (Outfall 001). Outfall 001 discharges cooling tower blowdown, boiler blowdown and wastewater from in-plant outfalls 601 and 603. These in-plant outfalls are considered Low Volume Discharges under the Federal Effluent Guidelines.

Storm water is also discharged to the Ohio River via Outfalls 002 and 003.

Table 1 presents a summary of unaltered Discharge Monitoring Report (DMR) data. Data are presented for the period January 2009 to December 2014.

Basis of the Modification

The Hanging Rock Energy Facility's uses chlorine in the cooling tower to prevent biological growths that hamper the heat transfer process. The current permit is written assuming that discharges of chlorine are continuous. The company has requested alternate limits that would allow higher concentrations of chlorine to be discharged for short periods. Ohio EPA has reviewed the proposal and would allow effluent concentrations up to 0.2 mg/l for periods not to exceed 2 hours (120 minutes) per day.

Limits for residual chlorine are required because chlorine is an NSPS parameter under the federal effluent regulations for steam electric power facilities. Limits on total residual oxidants reflects the use of bromine and bromine/chlorine mixtures for control of biofouling in the cooling system. The analytical method for these pollutants does not easily distinguish between bromine and chlorine, and limits are set for the total measurement (residual oxidants) as a result. Waterford Energy reports results for residual chlorine when only chlorine is used as a biocide, and reports residual oxidants when bromine or bromine/chlorine mixtures are used.

The chlorine limit is based on an analysis of the inside-mixing-zone maximum WQS when discharges of chlorine are limited to two hours per day. This information indicates that WQS can be significantly higher for a two hour per day exposure than when organisms are exposed for 48- to 96-hours, as is typical of most acute aquatic toxicity tests. The 120 minute limit on chlorine/bromine duration regulates the exposure time so that chlorine levels will not exceed WQS. These limits are more restrictive than NSPS.

To account for two different chlorine limits, the requirements for Outfall 001 have been separated into two tables – Outfall 001 requirements apply when chlorination occurs less than 120 minutes per day, and requirements for new reporting station 091 apply when chlorination occurs more than 120 minutes per day. The limits for Outfall 001 now include chlorine limits at 0.2 mg/l, and a chlorination duration limit of 120 minutes to ensure that the duration is not exceeded.

Because effluent limits for chlorine are required by the effluent guidelines, the Outfall 091 requirements have been changed to include effluent limits based on Inside-Mixing-Zone Maximum WQS. This limit (0.038 mg/l) is more restrictive than the NSPS limit for Free Available Chlorine (0.2 mg/l 30-day average, 0.5 mg/l maximum).

Table 1 DMR Data for Hanging Rock Energy Facility Outfall 001. Data is from 2011-15

Parameter	Season	Units	Current Permit Limits		# Obs.	Percentiles		Data Range
			30 day	Daily		50 th	95 th	
<u>Outfall 001</u>								
Water Temperature	Annual	F		Monitor	1140	90.2	125	55.2-140
Chemical Oxygen Demand (Low Level)	Annual	mg/l		Monitor	51	37	98.5	13-243
pH	Annual	S.U.		6.5 to 9.0	1455	7.84	8.57	6.5-8.98
Residue, Total Dissolved	Annual	mg/l		Monitor	44	1180	1830	106-2030
Total Suspended Solids	Annual	mg/l	30	100	204	5	17.9	0-33
Oil and Grease, Hexane Extr Method	Annual	mg/l		Monitor	203	0	0	0-18
Zinc, Total Recoverable	Annual	ug/l		Monitor	203	0	38.6	0-257
Copper, Total Recoverable	Annual	ug/l		Monitor	203	9	28.9	0-241
Flow Rate	Annual	MGD		Monitor	1453	0.843	1.82	0.0008-3.24
Chlorine, Total Residual	Annual	mg/l		Monitor	1455	0.02	0.04	0-0.08
Acute Toxicity, Ceriodaphnia dubia	Annual	TUa		Monitor	3	0	0.9	0-1
Acute Toxicity, Pimephales promelas	Annual	TUa		Monitor	3	0	0.9	0-1
Residue, Total Filterable	Annual	mg/l		Monitor	159	2040	3120	144-3960
CBOD 5 day	Summer	mg/l		Monitor	24	2	9.25	0-11
CBOD 5 day	Winter	mg/l		Monitor	26	0	3	0-6

Table 1. Modified Final Effluent Limits and Monitoring Requirements for Hanging Rock Energy Outfall 001

Parameter	Units	Concentration		Loading (kg/day) ^a		Basis ^b
		30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	
<i>Outfall 001</i>						
Flow	MGD	----- Monitor -----		-----		M ^c
Temperature	°F	----- Monitor -----		-----		M ^c
pH	S.U.	-----		6.5 - 9.0		WQS
5-day Carbonaceous Oxygen Demand (CBOD5)	mg/L	----- Monitor -----		-----		M ^c
Chemical Oxygen Demand	mg/L	----- Monitor -----		-----		M ^c
Total Filterable Solids	mg/L	----- Monitor -----		-----		M ^c
Total Suspended Solids	mg/L	30	100	147	489	NSPS
Chlorine, Total Res. Chlorination/Bromination	mg/l	--	0.20	--	--	WLA/IMZM/BPJ
Duration	minutes	--	120	--	--	WLA/IMZM/BPJ
Oil & Grease	mg/L	----- Monitor -----		-----		M ^c
Copper	µg/L	----- Monitor -----		-----		M ^c
Zinc	µg/L	----- Monitor -----		-----		M ^c
Acute Toxicity	TUa	----- Monitor -----		-----		M ^c

^a Effluent loadings based on an average design flow of 1.29 MGD.

^b Definitions: **AD** = Antidegradation Rule OAC 3745-1-05
BPJ = Best Professional Judgment
M = BEJ of Permit Guidance 2: Determination of Sampling Frequency Formula for Industrial Waste Discharges
NSPS = New Source Performance Standard, 40 CFR Part 423, Steam Electric Power Generating regulations
RP = Reasonable Potential for requiring water quality-based effluent limits and monitoring requirements in NPDES permits (3745-33-07(A))
WLA = Wasteload Allocation procedures (OAC 3745-2)
WLA/IMZM = WLA limited by inside-mixing-zone maximum WQS
WQS = Ohio Water Quality Standards (OAC 3745-1)

^c Monitoring of flow and other indicator parameters is specified to assist in the evaluation of effluent quality and treatment plant performance.

Table 3. Modified Final Effluent Limits and Monitoring Requirements for Hanging Rock Energy Outfall 091

Parameter	Units	Concentration		Loading (kg/day) ^a		Basis ^b
		30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	
<i>Outfall 091</i>						
Flow	MGD	----- Monitor -----				M ^c
Temperature	°F	----- Monitor -----				M ^c
pH	S.U.	6.5 - 9.0				WQS
5-day Carbonaceous Oxygen Demand (CBOD5)	mg/L	----- Monitor -----				M ^c
Chemical Oxygen Demand	mg/L	----- Monitor -----				M ^c
Total Filterable Solids	mg/L	----- Monitor -----				M ^c
Total Suspended Solids	mg/L	30	100	147	489	NSPS
Chlorine, Total Res.	mg/l	--	0.038	--	--	WLA/IMZM
Oil & Grease	mg/L	----- Monitor -----				M ^c
Copper	µg/L	----- Monitor -----				M ^c
Zinc	µg/L	----- Monitor -----				M ^c
Acute Toxicity	TUa	----- Monitor -----				M ^c

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