National Pollutant Discharge Elimination System (NPDES) Permit Program

F A C T S H E E T

Regarding an NPDES Permit To Discharge to Waters of the State of Ohio
For the **FirstEnergy Ashtabula Plant**

Public Notice No.:11-06-010
Public Notice Date: June 3, 2011
Comment Period Ends: July 1, 2011

OEPA Permit No.: **3IB00012*LD**
Application No.: **OH0001121**

Name and Address of Applicant:

FirstEnergy Ashtabula Plant
2133 Lake Road East
Ashtabula, Ohio 44004

Name and Address of Facility Where Discharge Occurs:

FirstEnergy Ashtabula
2133 Lake Road East
Ashtabula, Ohio 44004
Ashtabula County

Receiving Water: **Lake Erie**

Subsequent Stream Network:

Introduction

Development of a Fact Sheet for NPDES permits is mandated by Title 40 of the Code of Federal Regulations, 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, as well as the methods by which the public can participate in the process of finalizing those actions.

FirstEnergy has requested a modification of this NPDES permit to (1) revise the mercury limits based on a variance from Ohio Water Quality Standards; and (2) revise the copper limit based on a dissolved metal translator for the bottom ash pond discharge.

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 (ORC 6111). Decisions to award variances to Water Quality Standards or promulgated effluent guidelines for economic or technological reasons will also be justified in the Fact Sheet where necessary.

In accordance with the antidegradation rule, OAC 3745-1-05, the Director has determined that a lowering of water quality in Lake Erie is necessary. Provision (D)(1)(g) of the antidegradation rule was applied to this application. This provision excludes the need for the submittal and subsequent review of technical alternatives and social and economic issues related to the degradation. Other rule provisions, however, including public participation and appropriate intergovernmental coordination were required and considered prior to reaching this decision.

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 forty-five (45) 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 Ohio Revised Code 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 OEPA 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.

Questions about permit conditions should be directed to Sandy Cappotto at (330) 963-1175 (email john.schmidt@epa.ohio.gov) or Eric Nygaard at (614) 644-2024 (email eric.nygaard@epa.ohio.gov).

Location of Discharge/Receiving Water Use Classification

FirstEnergy Ashtabula discharges to Lake Erie. The approximate location of the facility is shown in Figure 1.

This area of Lake Erie is described by Ohio EPA River Code: 24-800, USEPA River Reach #: N/A, County: Ashtabula, Ecoregion: Eastern Corn Belt Plains. Lake Erie is presently designated for the following uses: Exceptional Warmwater Habitat (WWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS), Public Water Supply (PWS), and Bathing Water (BW). Lake Erie is also classified as a Superior High Quality Water (SHQW) under Ohio's antidegradation rule.

Use designations define the goals and expectations of a waterbody. These goals are set for aquatic life protection, recreation use and water supply use, and are defined in the Ohio WQS (OAC 3745-1-07). The use designations for individual waterbodies are listed in rules -08 through -32 of the Ohio WQS. Once the goals are set, numeric water quality standards are developed to protect these uses. Different uses have different water quality criteria.

Use designations for aquatic life protection include habitats for coldwater fish and macroinvertebrates, warmwater aquatic life and waters with exceptional communities of warmwater organisms. These uses all meet the goals of the federal Clean Water Act. Ohio WQS also include aquatic life use designations for waterbodies which can not meet the Clean Water Act goals because of human-caused conditions that can not be remedied without causing fundamental changes to land use and widespread economic impact. The dredging and clearing of some small streams to support agricultural or urban drainage is the most common of these conditions. These streams are given Modified Warmwater or Limited Resource Water designations.

Recreation uses are defined by the depth of the waterbody and the potential for wading or swimming. Uses are defined for bathing waters, swimming/canoeing (Primary Contact) and wading only (Secondary Contact - generally waters too shallow for swimming or canoeing).

Water supply uses are defined by the actual or potential use of the waterbody. Public Water Supply designations apply near existing water intakes so that waters are safe to drink with standard treatment. Most other waters are designated for agricultural and industrial water supply.

Facility Description

The Ashtabula Plant generates electric power by the use of coal-fired boilers and steam turbine generators. The process operations performed at this facility are classified under Standard Industrial Classification (SIC) Code 4911, "Electric Services (Limited to steam electric power plants)". Discharges resulting from process operations are subject to federal treatment technology standards (Federal Effluent Guideline Limitations, contained in Chapter 40 of the Code of Federal Regulations, Part 423, "Steam Electric Power Generating" Industrial Category.)

Table 1 provides a summary description of the Ashtabula Plant outfalls, the types of wastewater discharged, the treatment systems used and the monitoring stations.

Table 1. FirstEnergy Ashtabula Plant Outfall and Treatment Descriptions

Outfall	Type of Wastewater	Treatment System Used	Discharge Point
001	once-through cooling water, boiler blowdown (internal station 605)	disinfection (as needed)	Lake Erie
002	bottom ash transport, ash storage runoff, internal stations 604, 613, 615	settling, filtration	Lake Erie
006	low volume effluent (water plant wastewaters, floor and equipment drains)	settling, skimming, filtration	Lake Erie
604	coal pile runoff	neutralization, chemical precipitation	Outfall 002
605	boiler blowdown	none	Outfall 001
613, 615	metal cleaning waste	neutralization, chemical precipitation, pressure filtration	Outfall 002
800	intake prior to cooling operation		

The current permit contains monitoring and limits at internal stations 604, 605, 613 and 615. Effluent guideline limits are applied at these stations to ensure that these treatment standards are met prior to combining with other waste streams. If monitoring was not done at these locations, it would not be possible to verify compliance with these standards due to dilution. Federal rules prohibit attaining treatment standards by dilution [40 CFR 125.3(f)].

Basis of the Modification

FirstEnergy is applying for a variance from their water quality based limit for mercury at Outfall 002.

Mercury Variance
Ohio Water Quality Standards allow variances from water quality standards [OAC 3745-1-01(F)]; the permit rules contain specific requirements for the application and granting of variance-based limits to NPDES permittees [OAC 3745-33-07(D)]. The rules on variance-based limits contain a statewide mercury variance that is applicable to a variety of dischargers. If a permittee can show that its discharge qualifies for the statewide variance, they may apply for a variance without submitting economic and treatability information that the Director has already reviewed.

FirstEnergy Ashtabula has applied for coverage under the general mercury variance, Rule 3745-33-07(D)(10) of the Ohio Administrative Code. Based on the results of low-level mercury monitoring, the Director has determined that FirstEnergy Ashtabula Plant's Outfall 002: (1) has the reasonable potential to contribute to exceedances of mercury WQS, and therefore must have a permit limit; and (2) can not currently meet the 30-day average water quality based effluent limit (WQBEL) of 1.3 nanograms per liter (ng/l). The permittee believes that the plant will be able to achieve an annual average mercury effluent concentration of 12 ng/l. The variance application also demonstrated to the satisfaction of Ohio EPA that there is no readily apparent means of complying with the WQBEL without constructing prohibitively expensive end-of-pipe controls for mercury. Based on these factors, the permittee is eligible for coverage under the general mercury variance.

Ohio EPA has reviewed the mercury variance application and has determined that it meets the requirements of the Ohio Administrative Code. As part of the modification application, the company has submitted the following information required by the variance rule:

- A certification that FirstEnergy intends to be subject to the terms of the mercury variance rule;
- A description of mercury reduction or elimination projects taken to date;
- A plan of study to identify and evaluate potential mercury sources and potential methods for reducing or eliminating mercury from Outfall 002;
- An explanation of why the company can not meet the water quality based limit without constructing end-of-pipe controls; and
- An Antidegradation Addendum showing how the discharge would meet the requirements of the Antidegradation Rule.

The mercury variance rule defines the limit of treatability for mercury (12 ng/l as an annual average). Dischargers that can meet this standard are therefore meeting the Best Available Demonstrated Control Technology (BADCT) requirements for mercury. The Ashtabula Plant Outfall 002 is able to currently meet this requirement.

Based on these items, Ohio EPA has determined that the application is complete. All of the items above have been addressed; in the Antidegradation Addendum, FirstEnergy has identified the amount of pollutant to be discharged, the preferred alternative, and the reasons why centralized or regional treatment is not a good option. Diversion of this waste stream to the Ashtabula WWTP for regional treatment is not a good option because this wastewater will not be affected by biological treatment, and would not likely result in lower mercury concentrations ultimately discharged.

Mercury variance applications are excluded from the alternatives analysis, socio-economic justification and decision-making portions of the Antidegradation Rule because these factors were assessed in writing and reviewing the mercury variance portion of the state NPDES Rules.

As a result, Ohio EPA is proposing a modification to the NPDES permit. Mercury variance provisions are being added as Items M and N in Part II of the NPDES permit. The following requirements have been included in the draft modification:

- A variance-based monthly average effluent limit of 5.8 ng/l, which was developed from sampling data submitted by the permittee; this limit represents an upper bound of monthly average values (PEQaverage value) for the period January 2007 to March 2011. The data used to set this limit are attached;
- A requirement that the permittee make reasonable progress to meet the water-quality-based effluent limit for mercury by implementing the plan of study, which has been developed as part of the Pollutant Minimization Program (PMP);
- Low-level mercury monitoring of the plant's influent and effluent;
- A requirement that the annual average mercury effluent concentration is less than or equal to 12 ng/l as specified in the plan of study;
- A summary of the elements of the plan of study;
- A requirement to submit an annual report on implementation of the PMP; and
- A requirement for submittal of a certification stating that all permit conditions related to implementing the plan of study and the PMP have been satisfied, but that compliance with the monthly average water quality based effluent limit for mercury has not been achieved.

The PMP requirements in the draft permit have been expanded beyond the items in FirstEnergy's original application, based on conditions added to the PMPs for FirstEnergy's Lake Shore and Bay Shore Plant variances. The mercury variance rule assumes that existing treatment system performance is optimally removing mercury. It also assumes that the mercury in the discharge is dissolved; that is why the treatment system reviewed at the time was reverse osmosis. Based on the variance request and conditions for other FirstEnergy variances, the draft permit includes the following items in the PMP:

- Review the treatment of mercury through the treatment plants tributary to Outfall 002; determine what can be done to optimize mercury removal;
- Assess the portion of mercury in the discharge that is dissolved versus suspended; a high percentage of suspended mercury may indicate that additional treatment could be effective;
- Look for coal sources with a lower mercury content;
- Minimize migration of fugitive dust from the coal pile to the plant outfalls;
- Look at eliminating mercury switches and thermometers; and
- Replacing fluorescent lighting with mercury-free bulbs.

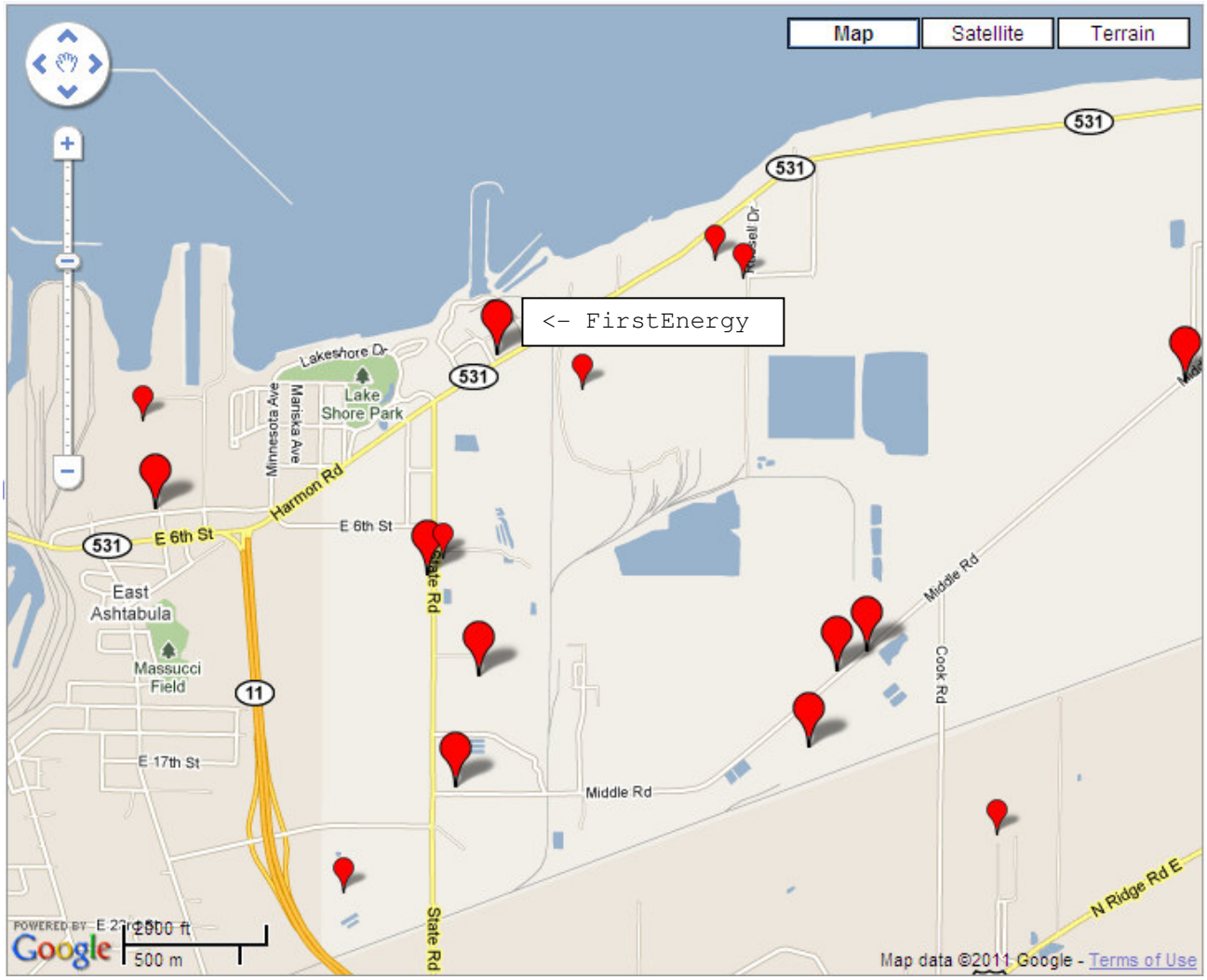

Figure 1. Approximate location of FirstEnergy Ashtabula.

Table 1. Effluent Limits and Discharge Monitoring Report Data for FirstEnergy Ashtabula Plant Outfalls 002 and 605.

Parameter	Season	Units	Current Permit Limits		# Obs.	Percentiles		Data Range	Decision Criteria		
			30 day	Daily		50th	95th		# Obs.	PEQ_{ave}	PEQ_{max}
Outfall 002											
Total Suspended Solids	Annual	mg/l	30	100	365	5	13.8	0-32	365	8.9	15
Total Suspended Solids	Annual	kg/day	42	140	365	5.27	18.7	0-39.5			
Oil and Grease, Total	Annual	mg/l	15	20	205	0	0	0-0	205	--	--
Oil and Grease, Total	Annual	kg/day	21	28	204	0	0	0-0			
Copper, Total Recoverable	Annual	ug/l	Monitor		102	0	10.9	0-36.2	102	9.4	13.6
Copper, Total Recoverable	Annual	kg/day	--	--	102	0	0.0111	0-0.0404			
Flow Rate	Annual	MGD	Monitor		1543	0.322	0.511	0.033-0.7			
Mercury, Total (Low Level)	Annual	ng/l	1.3	1700	42	1.63	5.18	0-13.7	42	5.8	9.4
Mercury, Total (Low Level)	Annual	kg/day	0.000002	0.00238	42	2.01E-06	1.02E-05	0-0.0000214			
pH, Maximum	Annual	S.U.	--	9.0	1551	8.1	8.6	6.9-11			
pH, Minimum	Annual	S.U.	--	6.0	1551	7.6	8.3	3.6-8.5			
Outfall 605											
pH	Annual	S.U.	Monitor		166	9.33	9.52	8.15-9.89			
Total Suspended Solids	Annual	mg/l	30	100	48	0	5.95	0-7			
Total Suspended Solids	Annual	kg/day	--	--	47	0	0.0693	0-0.0795			
Oil and Grease, Total	Annual	mg/l	15	20	47	0	0	0-0			
Oil and Grease, Total	Annual	kg/day	--	--	46	0	0	0-0			
Flow Rate	Annual	MGD	Monitor		1138	0.003	0.003	0-0.003			

Table 2. Final effluent limits and monitoring requirements for FirstEnergy Ashtabula outfalls 3IB00004600 and 3IB00004002 and the basis for their recommendation.

		Effluent Limits				
		Concentration		Loading (kg/day)[a]		
Parameter	Units	30 Day Average	Daily Maximum	30 Day Average	Daily Maximum	Basis[b]
Influent station 600						
Mercury, T.	ng/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Outfall 002						
Flow	MGD	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Suspended Solids	mg/l	30	100	42	140	BPT
Oil and Grease	mg/l	15	20	21	28	BPT
pH	S.U.	- - - - - - - - - - - -	6.0 to 9.0	- - - - - - - - - - - - - - -		BPT
Copper, T. R.	µg/l	- - - - - - - - - - - -	Monitor	- - - - - - - - - - - - - - -		M[c]
Mercury, T.	ng/l	5.8	1700	0.0000081	0.00238	VAR, WQS

[a] Effluent loadings based on average discharge flow of 0.370 MGD.

[b] Definitions: BPJ = Best Professional Judgment; BPT = Best Practicable Waste Treatment Technology, 40 CFR Part 423, Steam Electric Power Generating Industrial Category; EP = Existing Permit; M = Monitoring; RP = Reasonable Potential for requiring water quality-based effluent limits and monitoring requirements in NPDES permits (3745-33-07(A)); VAR = Variance from WQ-based effluent limits [OAC 3745-33-07(D)(10)]; WLA = Wasteload Allocation procedures (OAC 3745-2); WLA/IMZM = Wasteload Allocation limited by Inside Mixing Zone Maximum; 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.

Attachment A – Outfall 002 Effluent Data for Mercury

Parameter name: Mercury, Total (Low Level)
Reporting code: 50092 (6/9/2003-12/3/2010)
Units of measure: ng/l

# of Obs.	# of Obs. > MDL	# of Obs. excluded	Min. Value	Max. Value	MaxChk Value	PEQ Method	R^2 Value	PEQ average	PEQ max.
52	47	0	0.5	13.7	15.222	B	0.97333	7.4575	11.827

Permit number: 3ib00012
Outfall number: 002

Date	Reported Value	A Code	MDL	Enter "x" to exclude as outlier
6/9/2003	11			
6/11/2003	11			
8/12/2003	1.7			
12/8/2003	1.91			
3/15/2004	1.08			
6/15/2004		AA	.20	
8/17/2004	1.68			
12/16/2004	0.9			
3/7/2005	13			
6/21/2005	1			
8/16/2005		AA	.2	
12/5/2005	0.67			
3/16/2006	1			
6/12/2006		AA	.2	
8/9/2006	0.5			
12/6/2006	2.08			
3/6/2007		AA	.5	
6/4/2007	1.82			
8/21/2007	0.972			
12/12/2007	0.549			
3/4/2008	3.79			
6/3/2008	1.38			
7/7/2008	0.642			
8/12/2008	1.52			
9/8/2008	2.03			
10/2/2008	1.42			
11/19/2008	3.23			
12/2/2008	3.91			
1/8/2009	2.74			
2/10/2009	2.13			
3/12/2009	1.78			
4/17/2009	4.85			
5/18/2009	0.764			
6/8/2009	0.609			
7/9/2009	1.49			
8/5/2009	0.622			
9/11/2009	0.513			
10/19/2009	3.98			
11/13/2009	2.16			
12/1/2009	2.14			
1/15/2010	13.7			
2/5/2010	3.82			
3/19/2010	1.5			
4/2/2010	1.74			
5/20/2010	2.86			
6/10/2010	1.33			
7/1/2010	2.18			
8/9/2010	0.5			
9/20/2010		AA	0.2	
10/1/2010	5.2			
11/3/2010	10.8			
12/3/2010	1.23