



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

May 6, 2013

Mr. Timothy Thiemann
Duke Energy of Ohio, Inc.
P.O. Box 960
Cincinnati, Ohio 45201

**RE: Duke Energy of Ohio Miami Fort, OH0009865; 1IB00001*ID, Pre-Permit/CEI
NOTICE OF VIOLATION**

Dear Mr. Thiemann:

On April 10, 2013, Eric Nygaard, Andrew Bachman and I conducted a NPDES Pre-Permit/Compliance Evaluation Inspection (CEI) at Duke Energy of Ohio Miami Fort (Miami Fort). Pat Coyle, Mike Byrd, Tara Thomas, and Becky Schmidt represented Miami Fort. The purpose of this inspection was to evaluate compliance with the terms of the NPDES permit, and update the NPDES permit application. Please note that the report, by its format, tends to highlight negative areas.

As indicated in the attached CEI report, all the areas received a Satisfactory rating.

Thank you and your staff for the time extended during your inspection. If you have any questions, please contact me at this office at (937) 285-6108.

Sincerely,

Marianne Piekutowski
Environmental Specialist 2
Division of Surface Water

MP/kb

Enclosures

cc: Pat Coyle, Duke Energy of Ohio
Mike Byrd, Duke Energy of Ohio Miami Fort



State of Ohio Environmental Protection Agency
Southwest District Office

NPDES Compliance Inspection Report

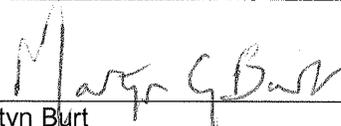
Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
11B00001*ID	OH0009865	4/10/2013	C	S	2

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Duke Energy of Ohio Miami Fort Station 11021 Brower Road North Bend, Ohio 45052	10:00 am	7/1/2009
	Exit Time	Permit Expiration Date
	2:00 pm	7/31/2013
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Pat Coyle, Sr. Environmental Scientist Mike Byrd, Environmental Coordinator Tara Thomas, Becky Schmidt	(513) 287-2268 (513) 467-4957	
Name, Address and Title of Responsible Official	Phone Number	
Timothy V. Thiemann, VP Midwest Generation Duke Energy of Ohio, Inc. P.O. Box 960 Cincinnati, Ohio 45201		

Section C: Areas Evaluated During Inspection					
(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)					
S	Permit	N	Flow Measurement	N	Pretreatment
S	Records/Reports	N	Laboratory	S	Compliance Schedule
S	Operations & Maintenance	S	Effluent/Receiving Waters	S	Self-Monitoring Program
S	Facility Site Review	N	Sludge Storage/Disposal	N	Other
N	Collection System				

Section D: Summary of Findings (Attach additional sheets if necessary)

See attached report.

Inspector	Reviewer
	
5/6/13 Date	5/10/13 Date
Marianne Piekutowski Division of Surface Water Southwest District Office	Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office

Sections E thru K: Complete on all inspections as appropriate
Y – Yes, N – No, N/A – Not Applicable, N/E – Not Evaluated

Section E: Permit Verification

Inspection observations verify the permit

- (a) Correct name and mailing address of permittee Y
- (b) Correct name and location of receiving waters..... Y
- (c) Do Categorical Standards apply?...If yes, list applicable standards.. Y

40 CFR 423 Steam Electric Generating
- (d) Product(s) and production rates conform with permit application (Industries)..... Y
- (e) Flows and loadings conform with NPDES permit..... Y
- (f) Treatment processes are as described in permit application... Y
- (g) All discharges are permitted..... Y
- (h) Number and location of discharge points are as described in permit..... Y
- (i) Storm water discharges properly permitted..... Y

Comments/Status:

Section F: Compliance

- (a) Any significant violations since the last inspection..... N
- (b) Appropriate Non-compliance notification of violations..... NA
- (c) Permittee is taking actions to resolve violations..... NA
- (d) Permittee has a compliance schedule..... Y
- (e) Compliance schedule contained in...**NPDES Permit**
- (f) Permittee is in compliance with schedule..... Y
- (g) Has biomonitoring shown toxicity in discharge since last inspection N

Comments/Status:

a) There was one TRC violation in August 2011. In May 2011, there was an oil spill where five gallons reached the Ohio River. In December 2008, a coal barge overturned when it was hit.

Section G: Operation & Maintenance

Treatment Works:

Treatment facility properly operated and maintained

- (a) Standby power available.....generator or dual feed Y
- i. What does the back-up power source operate.....
- There are diesel generators for the main plant. There are separate loops from other power plants. There is a dual feed a the sanitary package plant.
- ii. How often is the generator tested under load.....
- Unknown. It is in the plant preventative maintenance program.
- (b) Which components have an alarm system available for power or equipment failures.....
- There is an alarm for power failure. There is a visual alarm at the sanitary package plant.
- (c) All treatment units in service other than backup units..... Y
- (d) What method is used for scheduling routine & preventative maintenance (calendar, software, etc.).....
- This is done using plant software.
- (e) Any major equipment breakdown since last inspection..... Y
- (f) Operation and maintenance manual provided and maintained..... N
- (g) Any plant bypasses since last inspection..... N
- (h) Any plant upsets since last inspection..... N

Comments/Status:

a) In the event of a power failure, the pumps shutdown so nothing can be pumped out. A contractor (Synmat) maintains the FGD treatment. The ponds are passive.

Permit # : 1IB00001*ID
NPDES # : OH0009865

Section H: Sludge Management

(a) Method of Sludge Disposal...

Land Application

Haul to Another NPDES Permittee

Haul to a Mixed Solid Waste Landfill

*if one of the selected methods is land application, complete applicable charts.

Class A - Exception Quality Sewage Sludge (monitoring station 584)

Class B Sewage Sludge (monitoring station 581)

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options							
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 – Aerobic Bench Scale Analysis	Option 4 – Specific Oxygen Uptake Rate	Option 5 – Aerobic Time and Temperature	Option 6 – Alkali Addition	Option 7 – >75% Percent Solids without Unstabilized Solids	Option 8 - >75% Percent Solids with Unstabilized Solids
Alternative 1 – Time and Temperature Regime (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 – High pH and High Temperature (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 – Other Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 4 – Unknown Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Composting (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Heat Drying (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Heat Treatment (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Thermophilic Aerobic Digestion (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Beta Ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Gamma ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Pasteurization (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 6 - Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(a) Has amount of sludge generated changed significantly since the

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options									
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 – Aerobic Bench Scale Analysis	Option 4 – Specific Oxygen Uptake Rate	Option 5 – Aerobic Time and Temperature	Option 6 – Alkali Addition	Option 7 – >75% Percent Solids without Unstabilized	Option 8 - >75% Percent Solids with Unstabilized	Option 9 – Land Injection	Option 10 – Immediate Incorporation
Alternative 1 - Geometric Mean of Seven Fecal Samples (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Aerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Air Drying (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Anaerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 – Composting (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Lime Treatment (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 – Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- last inspection..... N
- (b) How much sludge storage is provided at the plant.....
- (c) Records kept in accordance with State and Federal law (5 years according to OAC 3745-40-06)..... NE
- (d) Any complaints received in last year regarding sludge..... N
- (e) 5/8" screen at headworks for facilities that land apply sludge..... NA
- (f) Are sludge application sites inspected to verify compliance with NPDES permit..... NA
- (g) Is a contractor used for sludge disposal..... Y
 If so, what is the name of the contractor.....

Comments/Status:

Winelco hauls the solids to MSD. The ash pond solids go to the Lawrenceburg Ash Fill. The FGD solids are taken to Zimmer for disposal. Duke has a contractor who takes these to the Duke facilities.

Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary/Secondary flow measuring devices operated and maintained..... Y
 Type of device (e.g. weir with ultrasonic level sensor):
 Pump runs. FGD effluent has a mag meter.
- (b) Calibration frequency adequate NE
 (Date of last calibration:)
- (c) 24-hour recording instruments operated and maintained..... NE
- (d) Flow measurement equipment adequate to handle full range of flows..... NA
- (e) Actual flow discharged is measured..... Y
- (f) Flow measuring equipment inspection frequency
 *Daily Weekly monthly other

Comments/Status:

b) Outfall 001 has a continuous temperature monitor. It is a thermocouple used for this. Duke looked at the manufacturer's recommendations and did not find a calibration frequency. It has been added to the maintenance schedule every three years. The FGD flow meter did not have a calibration frequency either. This has been added to the maintenance schedule every three years.

Section I: Self-Monitoring Program (con't)

Sampling:

- (a) Sampling location(s) are as specified by permit..... Y
- (b) Parameters and sampling frequency agree with permit..... Y
- (c) Permittee uses required sampling method..... Y
 (see GLC page)
- (d) Monitoring records (i.e., flow, pH, DO) maintained for a minimum of three years including all original strip chart recordings (i.e, continuous monitoring instrumentation, calibration and maintenance records)..... Y

Comments/Status:

d) The temperature data is maintained electronically.

Section I: Self-Monitoring Program (con't)

Laboratory:

General

- (a) Does the Quality Assurance Manual contain written Standard Operating Procedures (SOP's) for all analysis performed onsite..... Y
- (b) Do SOP's include the following if applicable..... Y
- | | |
|------------------------------------|-----------------------------|
| • Title | • Procedure |
| • Scope and Application | • Calculations |
| • Summary | • Quality Control |
| • Sample Handling and Preservation | • Maintenance |
| • Interferences | • Corrective Action |
| • Apparatus and Materials | • Reference (Parent Method) |
| • Reagents | |

Note: Standard Methods 1020A establishes that "Quality assurance (QA) is the definitive program for laboratory operation that specifies the measure required to produce defensible data of known precision and accuracy. Standard operating procedures are to be used in the laboratory in sufficient detail that a competent analyst unfamiliar with the method can conduct a reliable review and/or obtain acceptable results." SOPs should be developed for each analytical procedure.

- (c) EPA approved analytical testing procedures used (40 CFR 136.3).. Y
- (d) If alternate analytical procedures are used, proper approval has been obtained..... NA
- (e) Analyses being performed more frequently than required by permit. N
- (f) If (e) is yes, are results in permittee's self-monitoring report..... NA
- (g) Satisfactory calibration and maintenance of instruments/equipment. Y (see score from GLC page)
- (h) Commercial laboratory used..... Y
Parameters analyzed by commercial lab: Various. TRC is done on-site.
Lab name: Winelco, TestAmerica, Duke Charlotte

Discharge Monitoring Report Quality Assurance (DMRQA)

- (a) Participation in latest USEPA quality assurance performance sampling..... Y
Date: Currently running.
- (b) Were any parameters "Unsatisfactory"..... Y
- (c) Reasons for "Unsatisfactory" parameters.....
O&G with TestAmerica. Resampled and satisfactory. Report in file.

Comments/Status:

URS did the sampling (clean hands, dirty hands method) for the low level mercury.

Section J: Effluent/Receiving Water Observations

Outfall # 1IB00001001

Outfall Description: Submerged outfall for condenser cooling water. Thermocouple to measure temperature. Could see a roll in water where line emptied into river. No evidence of solids, etc.

Receiving Stream: Ohio River

Receiving Stream Description: Warmwater habitat.

Outfall # 1IB00001002

Outfall Description: Submerged outfall for ash ponds. Observed discharge as it exited second ash pond. Discharge was clear. No evidence of solids, etc.

Receiving Stream: Ohio River

Receiving Stream Description: Warmwater habitat.

Outfall # 1IB00001006

Outfall Description: Outfall for on-site sanitary package plant. Observed flows at the UV disinfection point. No solids present.

Receiving Stream: Ohio River

Receiving Stream Description: Warmwater habitat.

Outfall # 1IB00001020

Outfall Description: Storm water outfall for north area of plant. No discharge on day of inspection.

Receiving Stream: Ohio River

Receiving Stream Description: Warmwater habitat.

Outfall # 1IB00001021

Outfall Description: Storm water outfall for building roof drains and plant yard area. No discharge on day of inspection.

Receiving Stream: Ohio River

Receiving Stream Description: Warmwater habitat.

Outfall # 1IB00001022

Outfall Description: Storm water outfall for switchyard area. No discharge on day of inspection.

Receiving Stream: Ohio River

Receiving Stream Description: Warmwater habitat.

Comments/Status:

Required outfall signage present for 001 and 002. Did not go to outfall for 006. Small outfall signs noting the storm water outfalls.

Section K: Multimedia Observations

- (a) Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories..... N
- (b) Do you notice staining or discoloration of soils, pavement or floors.. N
- (c) Do you notice distressed (unhealthy, discolored, dead) vegetation.. N
- (d) Do you see unidentified dark smoke or dust clouds coming from sources other than smokestacks..... N
- (e) Do you notice any unusual odors or strong chemical smells..... N
- (f) Do you see any open or unmarked drums, unsecured liquids, or damaged containment facilities..... N

If any of the above are observed, ask the following questions:

- (1) What is the cause of the condition?
- (2) Is the observed condition or source a waste product?
- (3) Where is the suspected contaminant normally disposed?
- (4) Is this disposal permitted?
- (5) How long has the condition existed and when did it begin?

Comments/Status:

The coal pile run-off goes through the ash ponds prior to reaching the Ohio River.

Permit # : 11B00001*ID
NPDES # : OH0009865

**DUKE ENERGY OF OHIO MIAMI FORT STATION
NPDES PRE-PERMIT/COMPLIANCE EVALUATION INSPECTION
DATE OF INSPECTION: April 10, 2013**

ITEMS FOR DISCUSSION:

The purpose for the inspection was to evaluate the information in the NPDES permit application to verify everything was up to date. In addition, this was my first inspection at Miami Fort. The inspection was used to familiarize myself with the facility as a whole.

COMPLIANCE EVALUATION:

A compliance check was done for the period of July 1, 2009 through April 10, 2013. The following violation was noted:

Station No. 1IB00001001

Parameter	Code	Date	Reported	Permit Limit
Chlorine, TR	55060	08/08/11	0.729 mg/L	0.2 mg/L

The twenty-four hour notification and reason for the violation was provided as required. In addition, the following releases were noted:

- 1) December 25, 2008 – A coal barge overturned when it was hit.
- 2) August 8, 2011 – There was an oil spill at the facility. A total of five gallons reached the Ohio River.

Both of these items were addressed.

Please be advised that failure to comply with the effluent limitations, or to satisfy monitoring or reporting requirements of your NPDES permit may be cause for enforcement action pursuant to the Ohio Revised Code Chapter 6111. This inspection report will be the Notice of Violation for these items. The facility has returned to compliance. No additional actions are needed.

OBSERVATIONS:

Miami Fort had a problem with the placement of the thermocouple at outfall 001. Unexplainable temperature spikes were noted when there was no cooling water being discharged. The probe was placed in the top of the line. Whenever a boiler blowdown occurred, the temperature would spike. The facility worked to find the correct placement. The temperature data was corrected and resubmitted. In May 2012, the

probe placement was corrected. In June 2012, the corrected data was resubmitted. This issue has been resolved.

Miami Fort submitted notification of an anticipated bypass of its cooling tower for maintenance. This is not expected to impact compliance.

On April 3, 2012, a letter was submitted to Ohio EPA noting a test for air permitting was to be done using a refined coal discharge. The test was run, but no additional work is being done with this.

On the day of the inspection, Winelco (Bob Reckers) was at the sanitary package plant. The on-site bound logbook was being maintained. In addition, a slip noting what was done at the site is also kept. A copy of the license for the operator-of-record was also there (WW3-1011944-83). It expires on December 31, 2013. The plant was operating the day of the inspection. The sand filters had been raked. The sand has been replaced in the sand filters, and was ready to be disposed of. The sludge is hauled to MSD of Greater Cincinnati Mill Creek WWTP for disposal. Large old belts have been placed on the top of the clarifiers. This was done to help keep the plant warm in the winter, and prevent sunlight from growing algae. Both UV lamps were working. The package plant has switch for back-up power.

The potable water for the facility is from Cleves. There are five on-site production wells, as well as an intake structure on the Ohio River. Diagrams of the intake structure were provided in a separate email.

The ash ponds are set up to maximize solids settling. First, the ash flows through a series of serpentine settling channels. This allows a large portion of the ash to settle out in the channels. These channels are cleaned out on an as-needed basis throughout the year. The wastewater then flows into the first sediment pond. There is no longer a discharge to waters of the state from this pond. The discharge goes to the second sediment pond. The discharge from this pond then enters the Ohio River through outfall 002. The solids from the ash ponds are disposed of at the Duke Lawrenceburg Ash Fill. On the day of the inspection, the water discharging was clear and free of solids. There is a boom around the discharge line to prevent any floatable solids from discharging.

The cooling water from the facility is discharged through outfall 001. There is a thermocouple present in this line to measure the temperature prior to discharge. The outfall is submerged in the Ohio River.

The Flue Gas Desulfurization (FGD) wastewaters have a separate treatment system. The wastewater goes through hydrocyclones for solids removal. The solids then are used to make gypsum. They are stored under roof and are hauled off in a barge. Extra gypsum solids and/or off-spec material is used for agricultural purposes. The wastewater then undergoes pH adjustment and an organosulfide precipitation. The wastewater then goes to a clarifier where the precipitated solids are removed, and the treatment system discharges to a ditch which drains to the ash ponds. The run-off from

this area and the coal piles also drains into this ditch. The system is operated by Synmat. The FGD solids are disposed of at the Zimmer facility.