Duke Energy Miami Fort Station
Copy

Environmental Protection Agency

Ted Strickland, Governor
Lee Fisher, Lt. Governor
Chris Korleski, Director

March 16, 2010

Duke Energy
Attn: Mr. Jim Stieritz
P.O. Box 960
Cincinnati, OH 45201

RE: Duke Energy Miami Fort Station/ Compliance Evaluation Inspection
NPDES Permit No. OH0009873/OEPA PERMIT NO. 1IB00001*ID

Dear Mr. Stieritz,

On March 10, 2010, I conducted an NPDES Compliance Evaluation Inspection at the Duke Energy Miami Fort Power Generating Station. Mssrs. Pat Coyle, J.R. Wood, Wayne Theobald, Bill Kramer, Ms. Tara Thomas and you were present during the inspection. The main purpose of the inspection was to locate/observe the toe drains for Ash Pond B as there is a PTI application in this office for a proposed collection system for the drains. This office submitted comments to Duke Energy on the proposed collection system and many of those questions were answered during the inspection and Duke Energy representatives will follow up through written correspondence. An evaluation with the terms and conditions of the NPDES permit for the Miami Fort Station was also completed.

A copy of inspection report is enclosed. As indicated on the attached NPDES Compliance Evaluation Inspection Report, all evaluated areas received "Satisfactory" ratings. However, **please pay attention to the "Items Requiring Correction" (shown in bold type) within the report, for there are compliance schedules associated with them.**

Thank you and your staff for the time extended during the inspection process. If you have any questions, please feel free to contact me by phone at (937) 285-6029 or by e-mail at joshua.jackson@epa.state.oh.us.

Respectfully,

Joshua Jackson
Environmental Specialist II
Division of Surface Water

Enclosures

Southwest District Office
401 East Fifth Street
Dayton, OH 45402-2911

937 | 285 6357
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OhioEPA

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
1IB00001*ID	OH0009873	3/10/2010	C	S	2

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Duke Energy Miami Fort Station 11021 Brower Road North Bend, OH, Hamilton County	10:00 a.m.	7/1/2009
	Exit Time	Permit Expiration Date
	11:50 a.m.	7/31/2013
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
JR Wood, Environmental Coordinator Tara Thomas, Sup. Process Chemistry	513-467-4886 513-467-4950	
Name, Address and Title of Responsible Official	Phone Number	
Jim Stieritz, Principal Environmental Specialist P.O. Box 960 Cincinnati, OH 45201	513-287-2269	

Section C: Areas Evaluated During Inspection
(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

S	Permit	S	Flow Measurement	N	Pretreatment
S	Records/Reports	N	Laboratory	N	Compliance Schedule
S	Operations & Maintenance	S	Effluent/Receiving Waters	N	Self-Monitoring Program
S	Facility Site Review	S	Sludge Storage/Disposal	N	Other
N	Collection System				

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

See attached report.

Inspector	Reviewer
3-16-10	3/16/10
Joshua Jackson — Date Division of Surface Water Southwest District Office	Martyn Burt — Date Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office

Inspection Findings
(items for correction are in bold type)

In 2009, samples obtained from the ditches adjacent to the Ash Pond B toe drains showed elevated levels of sulphates that were above background concentrations. The dikes for the ash pond consist primarily of fly ash and bottom ash and the toe drains divert any moisture from the area below the clay cap to the ditch. As a remedy, Duke Energy is proposing a collection system for the toe drains that would capture this wastewater and pump it into Ash Pond B for settling. Earlier this month Duke Energy submitted a Permit to Install (PTI) application to Ohio EPA Southwest District Office for this project.

The purpose of this inspection was to gain a "field perspective" of the proposed project area and to investigate whether there were any additional environmental concerns. The discharge from Ash Pond B (polishing pond) at monitoring station 1IB00001002 was observed as well as the sanitary wastewater treatment works.

Effluent Violations

EFFLUENT LIMIT VIOLATIONS
(Period of Review: January 2009 – January 2010)

7D = Weekly 30D = Monthly 1D = Daily
Conc. = Concentration (mg/l) Qty.= Quantity (Kg/Day)

Reporting Period	Station	Parameter	Limit Type	Limit	Reported Value
February 2009	002	pH	1D Conc	9.0	9.16

Items Noted During the Inspection

1. There are 41 toe drains that span from the northern side of Ash Pond B, down along the western side to the southeastern tip. Below is a picture of toe drain number 29 and the approximate location of proposed sump pump number 1. At the time of the observation, there were steady drips coming from the outlet pipe. Technical staff stated that this flow rate from these drains does not change much throughout the year.

2. The drainage ditch was bordered by an earthen berm on the opposite side of the Ash Pond Dike. This should help contain much of the sediment disturbed during construction with erosion/sediment controls placed prior to the outlet drains to the river.
3. The discharge from Ash Pond B was light gray in color and slightly turbid.
4. The sanitary wastewater treatment works appeared to be operating correctly as all the sludge return lines were working, the mixed liquor was chocolate brown in color and there were no objectionable odors. The new slow surface sand filters (2007) were operational and free from weeds as was the ultraviolet disinfection system.

Operator of Record Logbook

Duke Energy has contracted with Winelco to serve as the Operator of Record for the sanitary wastewater treatment works (WWTW). At the time of the inspection, there was no Operator of Record logbook located on the WWTW grounds. The Operator of Record logbook is required by Ohio Administrative Code 3745-7-09 and should document the following information:

> *1) The records shall be housed and maintained in such a manner as to be protected from weather damage and guarantee the authenticity and accuracy of the records contained within.*
> *(2) The records shall be accessible onsite for twenty-four hour inspection by agency or emergency response personnel.*

(3) At a minimum, the following information shall be recorded:

(a) Identification of the public water system, sewerage system, or treatment works;

(b) Date and times of arrival and departure for the operator of record and any other operator required by this chapter;

(c) Specific operation and maintenance activities that affect or have thepotential to affect the quality or quantity of sewage or waterconveyed, effluent or water produced;

(d) Results of tests performed and samples taken, unless documented on a laboratory sheet;

(e) Performance of preventative maintenance and repairs or requests for repair of the equipment that affect or have the potential to affect the quality or quantity of sewage or water conveyed, effluent or water produced; and

(f) Identification of the persons making entries.

(4) The records shall be kept up to date, contain a minimum of the previous three months of data at all times, and be maintained for at least three years.

(B) A certified operator shall:

(1) Perform their duties in a responsible and professional manner consistent with standard operating procedures and best management practices;

(2) Operate and maintain public water systems, sewerage systems, treatment works, and appurtenances so as not to endanger the health or safety of persons working in or around the facility, the public at large, or the environment due to negligence or incompetence; and

(3) Report all instances of noncompliance with applicable regulations to the operator of record or facility supervisor.

(C) The duties of an operator of record shall include, but not be limited to, those outlined in paragraphs (B)(1) to (B)(3) of this rule and the following additional duties and responsibilities:

(1) Responsible and effective on site management and supervision of the technical operation of the public water system, treatment works, or sewerage system;

(2) Immediately notifying the permittee or owner of a public water system, sewerage system, or treatment works, and ensuring the agency and, if applicable, the local regulatory agency, is notified of items that require notification in accordance with sections 6109. or 6111. of the Revised Code, the rules adopted there under, or the facility's NPDES permit; and

(D) In the event that there are issues related to paragraphs (A) to (C) of this rule that are within the area of responsibility of, but beyond an operator of record or a certified operator's ability to address, it shall be the operator's responsibility to document any efforts to rectify the problem.

The ORC logbook must be stored on the WWTW grounds in a manner that meets the requirements of OAC 3745-7-09 by no later than April 2, 2010.

An "Operator of Record Notification Form" (attached) is required to be completed and submitted to Ohio EPA (required by Ohio Administrative Code 3745-07). This form must be submitted no later than April 2, 2010.

Laboratory

An evaluation of the laboratory at the Miami Fort Station was not part of this particular inspection; however, future inspections will include a review of the quality assurance program and standard operating procedures.

The foundation of the NPDES permitting program is the reliability of data "self-reported" by wastewater dischargers under permit. Part III, 3., of Duke Energy Miami Fort Station's NPDES permit requires "All wastewater treatment works shall be operated in a manner consistent with the following: At all times, the permittee shall maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee necessary to achieve compliance with the terms and conditions of this permit. *Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures...*" Part III, 5., goes on to say, "Test procedures for the analysis of pollutants shall conform to regulation 40 CFR 136... The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to insure accuracy of measurements."

The federal regulatory benchmark for all water and wastewater sampling/laboratory procedures is 40 CFR 136. This rule lists acceptable sampling and laboratory procedures published in "Standard Methods for the Examination of Water and Wastewater" (Standard Methods) among other resources such as the American Society for Testing and Materials (ASTM). Standard Methods is a comprehensive reference widely used throughout the industry and is cooperatively published by the American Water Works Association, Water Environment Federation and the American Public Health Association.

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 know precision and accuracy". *Without a QA program, the City is without defensible data showing compliance with the NPDES permit.* Standard Methods goes on to require the inclusion of Standard Operating Procedures (SOP) for each analytical method within the QA manual. The SOP should include the following applicable categories:

- Title
- Scope and Application
- Procedure
- Calculations

- Summary
- Sample Handling and Preservation
- Interferences
- Apparatus and Materials
- Reagents
- Quality Control (calibration)
- Maintenance
- Corrective Action
- Reference (Parent Method)

When developing the SOPs for the laboratory at the Miami Fort Station and other power generating stations, please use the attached examples for assistance. As stated earlier, future inspections will include an evaluation of the laboratory quality assurance program.

Flow Measurement

The current NPDES permit requires "24-hour total estimate" for discharge flow monitoring at station 002 (Ash Pond B). This is a 24-hour calculated flow derived from several inputs such as, the number of units in service, pump times, etc. After speaking with technical staff during the inspection, it appears that is has been several years since these calculations were originally prepared. In order to assure that good estimations are prepared, Duke Energy should revisit these calculations periodically since system performances (like pump curves) change as equipment ages or is replaced.

Please provide this office with an analysis of how the estimated discharge flow is calculated out outfall 002 by no later than May 7, 2010.

Ohio Environmental Protection Agency
Division of Drinking and Ground Waters
Operator Certification Unit

Operator of Record (ORC) Notification Form

Ohio Environmental Protection Agency
Division of Drinking and Ground Waters
Operator Certification Unit
50 West Town St, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

Phone: (614) 644-2752
1- 866 - 411-OPCT (6728)
Fax: (614) 644-2909
email: opcert@epa.state.oh.us
website: www.epa.state.oh.us/ddagw/opcert.html

I. SYSTEM INFORMATION

Name of System: _____ Phone Number: _____

PWS ID/NPDES Permit #:_____ STU # _____ Classification: _____

_____ _____
Name of Facility Owner or Permittee, Title (Print) Facility Owner or Permittee (Signature)

II. SYSTEM TYPE (Check only one of the following. Use additional sheets if necessary.)

Public Water System (PWS)	Distribution System	Treatment Works	Collection System

III. OPERATOR OF RECORD INFORMATION

Add Additional(A), New (N) or Remove(R)	Name of Operator of Record	Certification Number & Expiration Date	I verify that I am the onsite certified operator responsible for the technical operation of the above referenced facility. (Signature of certified operator)*

* A signature by an operator of record who is being removed is not required.
(Attach additional sheets if necessary.)

Amount of time an ORC spends onsite at the Facility: _____

For Internal Use Only	
Reviewed by:	Date of SDWIS update:
Date of Compliance Status Letter:	

RESIDUE, TOTAL NONFILTERABLE DRIED AT 103-105°C
(total suspended solids)

OHIO EPA METHOD 130.3
STD METHODS 18th, 19th, & 20th ed. METHOD 2540 D

STORET NO. 00530

1. **SCOPE AND APPLICATION:** This method is used for the determination of total suspended residue in natural surface water, treated and untreated sewage, and industrial wastewater. It may also be used for potable water.

Optimum working range:	5.0 - 20,000 mg/L
Limit of detection:	5.0 mg/L

2. **SUMMARY OF METHOD:** A known volume of well-mixed sample is filtered through a pre-weighed glass fiber filter. The filter is dried for one hour at 103°C, desiccated for one hour and weighed. The method measures both the amount of material that is not soluble in water and that which exists in suspension.

3. **SAMPLE HANDLING AND PRESERVATION:**

3.1 Samples are cooled to 4°C immediately after collection in the field to minimize microbiological decomposition of solids. No preservatives are added.

3.2 A minimum sample volume of one quart collected in a polyethylene or glass container is required.

3.3 Samples should be submitted to the laboratory as soon as possible and analyzed within 7 days from the time of collection.

4. **INTERFERENCES:**

4.1 Large objects (sticks, leaves, fish, bugs, rocks, etc.) should be removed from the sample.

4.2 Heavy material, such as sand, may sink after mixing, so aliquots should be taken immediately after the sample is shaken vigorously.

4.3 A large quantity of various particles in a sample can result in poor results for duplicate precision. Such samples should be homogenized by blending, especially if the sample contains floating grease particles.

4.4 Samples containing excessive residue may retard the evaporation of water, especially if hygroscopic material is present. In such cases smaller aliquots should be taken to limit residue in any dish to no more than 200 mg.

5. **APPARATUS:**

5.1 Analytical balance: Mettler AE163 currently in use, with a capability of measuring to at least 0.0001 g

5.2 Drying oven capable of maintaining a temperature of 103 ± 2°C

5.3 Desiccator with indicator Drierite

pH

OHIO EPA METHOD 120.1
STD METHODS 18th, 19th, & 20th ed. 4500-H+ B

STORET NO. 00403

1. SCOPE AND APPLICATION:

This method is used for the measurement of pH in natural surface water, treated and untreated sewage, and industrial wastewater. It may also be used for potable and ground water. However, severe limitations are encountered in extremely acid or alkaline samples.

2. SUMMARY OF METHOD:

The samples are measured at room temperature while stirring using a pH meter and electrode that has been calibrated using two known pH buffers that encompass the expected pH of the samples. The pH, defined as -log[H^+], is measured potentiometrically. The meter is calibrated to read in standard pH units.

3. SAMPLE HANDLING AND PRESERVATION:

3.1 Samples are cooled to 4°C immediately after collection in the field. No preservatives are added.

3.2 A minimum sample volume of one quart collected in a polyethylene or glass container is required.

3.3 Samples should be submitted to the laboratory immediately and the pH measured as soon as possible. Sample pH should be obtained within 24 hours of the time of collection.

4. INTERFERENCES:

4.1 Results are subject to error when extreme pH values (below 1 or greater than 10) are encountered. The pH meter manufacturer instructions should be consulted when such values are expected.

4.2 Grease or oil in the sample can coat the electrode and cause a sluggish response. If the electrode is contaminated in this manner, clean by gently washing with a detergent solution, rinsing with tap water, 10% hydrochloric acid and finally reagent water. Be sure the electrode filling hole is closed during this cleaning operation.

5. APPARATUS:

5.1 Electronic pH meter with a pH readout having a temperature compensation and a slope adjustment: Orion 520A pH meter

5.2 Combination glass and reference electrode: Ross 80-03/81-72 Sure-Flow electrode

5.3 Magnetic stir plate and Teflon-coated magnetic stir bars

5.4 100 mL beakers