



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

CERTIFIED MAIL RETURN RECEIPT REQUESTED

In the Matter of an
Application for Permit by:

Tampa Electric Company
Mr. Stanley M. Kroh
Environmental, Health and Safety
P.O. Box 111
Tampa, Florida 33601

PA File No. FL0043869-008-IWB
Polk County
Polk Power Station
NPDES Permit No. FL0043869

NOTICE OF PERMIT MINOR REVISION ISSUANCE

Enclosed is Permit Number FL0043869 issued under Section 403.0885, Florida Statutes, and DEP Rule 62-620, Florida Administrative Code (F.A.C.), for a minor revision to the permit which authorizes the facility to discontinue the current pH effluent limitation and monitoring requirement, and modifies through cessation the use of caustic neutralization at internal outfall I-004, in lieu of more stringent monitoring and limitations for pH at Outfall D-001 (cooling pond discharge) which discharges to an unnamed reclaimed lake and eventually to Little Payne Creek, a Class III fresh water.

In addition, the Department has updated the requirements for the chronic definitive whole effluent toxicity tests to be consistent with Rule 62-620.620(3), F.A.C.

Monitoring requirements under this permit are effective on the first day of the second month following permit issuance. Until such time, the permittee shall continue to monitor and report in accordance with previously effective permit requirements, if any.

Any party to this order (permit) has the right to seek judicial review of the permit under Section 120.68, Florida Statutes, by the filing of a Notice of Appeal under Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, with the Clerk of the Department of Environmental Protection, Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000 and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within thirty days after this notice is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Mark P. Thomasson, P.E.

Director

Division of Water Resource Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

FILING AND ACKNOWLEDGMENT

FILED, on this date, under Section 120.52, Florida Statutes, with the designated deputy clerk, receipt of which is hereby acknowledged.

G. Shields 10-27-11
Clerk Date

CERTIFICATE OF SERVICE

The undersigned hereby certifies that this NOTICE OF PERMIT and all copies were mailed before the close of business on 10-27-11 to the listed persons.

G. Shields
Name

10-27-11
Date

Copies furnished by certified mail to:

Mark Nuhfer, NPDES Permitting Section, EPA Region 4, Atlanta, GA
Chairman, Board of Pinellas County Commissioners
Joshua Ellwein, P.E., Tampa Electric Company

Copies furnished by First Class mail to:

Ron Mezich, FWC Tallahassee
U.S. Fish & Wildlife Service

Copies furnished by intradepartmental mail to:

Jeff Greenwell, P.E., DEP Tampa
Yanisa Angulo, P.E., DEP Tampa
Ilia Balcom, DEP Tampa
Cindy Mulkey, DEP Tallahassee

**STATE OF FLORIDA
INDUSTRIAL WASTEWATER FACILITY PERMIT**

PERMITTEE:

Tampa Electric Company
P.O. Box 111
Tampa, FL 33601

PERMIT NUMBER:

FL0043869 (Major) (Rev. A)

PA FILE NUMBER:

FL0043869-007-IW1S

ISSUANCE DATE:

March 31, 2009

REVISION DATE:

October 26, 2011

EXPIRATION DATE:

March 30, 2014

RESPONSIBLE AUTHORITY:

Mr. Stanley M. Kroh
Land, Water and Stewardship Programs Manager

FACILITY:

Polk Power Station
9995 State Road 37, South
Mulberry, Florida 33860
Polk County

Latitude: 27° 43' 40" N Longitude: 81° 58' 22" W

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.) and applicable rules of the Florida Administrative Code (F.A.C.), and constitutes authorization to discharge to waters of the state under the National Pollutant Discharge Elimination System (NPDES). The above named permittee is hereby authorized to operate the facilities shown on the application and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

The facility is an electric generating plant with a total nominal generating capacity of approximately 920 megawatts (MW). The existing generating facility consists of five electrical generating units (Units 1, 2, 3, 4 and 5). Unit 1 is an integrated solid fuel gasification combined cycle unit, General Electric Model Number 7F, with a nominal net capacity of 260 MW. Unit 1 is capable of using a variety of solid fuels, such as 100 percent coal, 100 percent petroleum coke, and various coal/petroleum coke blends in between, as well as No.2 fuel oil as a backup fuel. Units 2 and 3 are two dual-fuel simple-cycle combustion turbine generators, General Electric PG7241FA, each with a nominal generating capacity of 165 MW. Units 4 and 5 consist of two simple-cycle combustion turbine generators, General Electric PG7241FA, each with a nominal generating capacity of 165 MW, which utilize fin-fan closed-loop cooling systems. Units 4 and 5 were placed into operation in 2007.

WASTEWATER TREATMENT:

The facility uses a recirculating cooling pond for heat dissipation with makeup from ground water and continuous discharge to Little Payne Creek via the unnamed reclaimed lake. The cooling reservoir, which has a capacity of approximately 3.5 billion gallons, receives treated effluent from an on-site Industrial Wastewater Treatment (IWT) system, precipitation, groundwater seepage, low-volume wastewater (reject water from the Reverse Osmosis Unit, boiler blowdown, and laboratory wastes), washdown from the materials storage areas, groundwater from the Floridan aquifer (make-up), stormwater run-off from the diversion box, and recirculated cooling water.

The IWT system treats the slag pile leachate and treated water from the oily water separator. The IWT includes the following basins and units: oil/water separator, dissolved air flotation tank, equalization basin, slag runoff retention basins, and sand filter. All oil-bearing equipment is segregated using curbed areas with drains directing wash water,

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stormwater runoff, minor leaks, and spills to the oil/water separator. Low volume wastes (boiler blowdown, laboratory wastes, and RO concentrate) are directed to the diversion box. Sand filter backwash water from the IWT system treatment is filtered and directed to the diversion box.

Effluent from the cooling pond is mixed and aerated in a sulfuric acid mixing sump, then monitored in a pH monitoring sump prior to discharge via Outfall D-001 to the unnamed reclaimed lake.

The metal cleaning wastes associated with the combustion turbine and compressor washing will be routed to the equalization basin for subsequent filtration treatment. Spent chemicals and metal cleaning wastes not associated with the wash operations will be disposed off site by a licensed contractor.

Stormwater runoff associated with industrial activity is collected around the plant, receives treatment via detention pond, and is discharged through Outfall D-002 into an old mine cut to the unnamed reclaimed lake. Stormwater within containment areas may be diverted to the oil-water separator thence discharged through I-004. Slag leachate collected from the slag pile is sent to either of the two double lined slag leachate ponds, then filtered prior to discharge via outfall I-004.

EFFLUENT DISPOSAL:

Surface Water Discharge:

An existing 3.10 MGD annual average daily flow of cooling reservoir blowdown through Outfall D-001 to an unnamed reclaimed lake, which is a Class III fresh water, thence to an unnamed ditch, thence to Little Payne Creek (WBIDs 1757A and 1757B). The Outfall D-001 point of discharge is located approximately at latitude 27° 43' 40" N, longitude 81° 58' 20" W.

An existing discharge of stormwater associated with industrial activity through Outfall D-002 to an unnamed old mine cut to an unnamed reclaimed lake, which is a Class III fresh water, thence to Little Payne Creek. The Outfall D-002 point of discharge is located approximately at latitude 27° 44' 00" N, longitude 81° 59' 10" W.

Internal Outfalls:

This permit authorizes discharges from existing internal outfalls I-003 and I-004 to the cooling reservoir.

IN ACCORDANCE WITH: The limitations, monitoring requirements and other conditions as set forth in Part I through Part VIII on pages 3 through 26 of this permit.

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Parameters (units)	Discharge Limitations			Monitoring Requirements		
	Monthly Average	Daily Maximum	Other	Monitoring Frequency	Sample Type	Sample Point
Cadmium, Total Recoverable (UG/L)	See Condition I.A.3.	See Condition I.A.3.	--	Semiannually	Grab	EFF-1
Copper, Total Recoverable (UG/L)	Report	See Condition I.A.3.	--	Semiannually	Grab	EFF-1
Zinc, Total Recoverable (UG/L)	Report	See Condition I.A.3.	--	Semiannually	Grab	EFF-1
Lead, Total Recoverable (UG/L)	Report	See Condition I.A.3.	--	Semiannually	Grab	EFF-1
Nickel, Total Recoverable (UG/L)	Report	See Condition I.A.3.	--	Semiannually	Grab	EFF-1
Selenium, Total Recoverable (UG/L)	5.0 ⁷	5.0 ⁷	--	Monthly	Grab	EFF-1
Silver, Total Recoverable (UG/L)	Report	0.07	--	Semiannually	Grab	EFF-1
Thallium, Total Recoverable (UG/L)	Report	6.3	--	Semiannually	Grab	EFF-1
Iron, Total Recoverable (MG/L)	Report	1.0	--	Semiannually	Grab	EFF-1
Specific Conductance (UMHO/CM)	Report	1275	--	Semiannually	Grab	EFF-1
Alpha, Gross Particle Activity (PCI/L)	15.0	15.0	--	Monthly	Grab	EFF-1
BOD, Carbonaceous 5 day, 20C (MG/L)	6.0	8.5	6.0 Annual Average ⁶	Monthly	Grab	EFF-1
Hardness, Total (as CaCO ₃) (MG/L)	Report	Report	--	Semiannually	Grab	EFF-1
<i>Chronic Whole Effluent Toxicity, 7-Day IC₂₅ (Ceriodaphnia dubia)</i>	<i>See Condition I.A.4</i>			<i>Quarterly</i>	<i>24-hr Composite</i>	<i>EFF-1</i>
<i>Chronic Whole Effluent Toxicity, 7-Day IC₂₅ (Pimephales promelas)</i>	<i>See Condition I.A.4</i>			<i>Quarterly</i>	<i>24-hr Composite</i>	<i>EFF-1</i>
Whole Effluent Toxicity	See Condition I.A.4.			Quarterly	Grab	EFF-1

⁶ Annual average means the maximum concentration at average annual flow conditions measured and represented as a 12-month rolling average.

⁷ Consent Order 07-0097 establishes an interim limitation of 10 ug/L for selenium, pursuant to the conditions of the order.

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821-R-02-013, Section 13.12 (*Ceriodaphnia dubia*) and Section 11.11 (*Pimephales promelas*).

The repeat test shall begin within 21 days after the last day of the invalid test.

- (3) If, during any bioassay, 100% mortality occurs in the 100% effluent concentration prior to the end of the bioassay and the control mortality is less than 20% at that time, that bioassay (including the control) shall be terminated with the conclusion that the test fails and constitutes non-compliance.
- (4) Additional follow-up tests shall be evaluated for acceptability based on the observed dose-response relationship as required by EPA-821-R-02-013, Section 10.2.6 and the evaluation shall be included with the bioassay reports.

f. Reporting Requirements

- (1) Results from all required tests shall be reported on the Discharge Monitoring Report (DMR) as follows:

(a) Routine and Additional Follow-up Test Results: The calculated IC25 for each test species shall be entered on the DMR.

~~(a) Routine and Additional Follow-up Test Results: The calculated NOEC for each test species shall be entered on the DMR. If the NOEC is greater than 100% effluent, enter ">100%".~~

- (2) A bioassay laboratory report for each routine test shall be prepared according to EPA-821-R-02-013, Section 10, Report Preparation and Test Review, and mailed to the Department at the address below within 30 days after the last day of the test.
- (3) For additional follow-up tests, a single laboratory report shall be prepared according to EPA-821-R-02-013, Section 10, and mailed within 30 days after the last day of the second valid additional follow-up test.
- (4) Data for invalid tests shall be included in the bioassay report for the repeat test.
- (5) All bioassay reports shall be sent to:

Florida Department of Environmental Protection
Southwest District Office
13051 N. Telecom Parkway
Temple Terrace, Florida 33637

g. Test Failures

- (1) A test fails when the test results do not meet the limits in 4.a.(1).
- (2) Additional Follow-up Tests:
 - (a) If a routine test does not meet the chronic toxicity limitation in 4.a.(1) above, the permittee shall notify the Department at the address above within 21 days after the last day of the failed routine test and conduct two additional follow-up tests on each species that failed the test in accordance with 4.d.
 - (b) The first test shall be initiated within 28 days of the last day of the failed routine test. The remaining additional follow-up tests shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed.
 - (c) The first additional follow-up test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 25%, 12.5%, 6.25% effluent. The permittee may modify the dilution series in the second additional follow-up test to more accurately bracket the toxicity such that at least two dilutions above and two dilutions below the target concentration and a control (0% effluent) are run. All test results shall be statistically analyzed according to the Appendices in EPA-821-R-02-013.
- (3) In the event of three valid test failures (whether routine or additional followup tests) within a 12-month period, the permittee shall notify the Department within 21 days after the last day of the third test failure.
 - (a) The permittee shall submit a plan for correction of the effluent toxicity within 60 days after the last day of the third test failure.
 - (b) The Department shall review and approve the plan before initiation.

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- (c) The plan shall be initiated within 30 days following the Department's written approval of the plan.
 - (d) Progress reports shall be submitted quarterly to the Department at the address above.
 - (e) During the implementation of the plan, the permittee shall conduct quarterly "routine" whole effluent toxicity tests in accordance with 4.d. Additional follow-up tests are not required while the plan is in progress. Following completion or termination of the plan, the frequency of monitoring for routine and additional follow-up tests shall return to the schedule established in 4.b.(1). If a routine test is invalid according to the acceptance criteria in EPA-821-R-02-013, a repeat test shall be initiated within 21 days after the last day of the invalid routine test.
 - (f) Upon completion of four consecutive, valid "routine" tests that demonstrate compliance with the effluent limitation in 4.a.(1) above, the permittee may submit a written request to the Department to terminate the plan. The plan shall be terminated upon written verification by the Department that the facility has passed at least four consecutive valid routine whole effluent toxicity tests.
If a test within the sequence of the four is deemed invalid, but is replaced by a repeat valid test initiated within 21 days after the last day of the invalid test, the invalid test will not be counted against the requirement for four consecutive valid tests for the purpose of terminating the plan.
 - (4) The Department may reopen the permit to require acute definitive whole effluent toxicity testing if mortality exceeds 50% in the 100% effluent sample before or at 96 hours from the start of the chronic test.
 - (5) The additional follow-up testing and the plan do not preclude the Department taking enforcement action for acute or chronic whole effluent toxicity failures ~~permit limit violations~~.
5. The daily minimum concentration for dissolved oxygen shall not be less than 5.0mg/L. The time and depth for sampling dissolved oxygen shall be specified and recorded. Dissolved oxygen monitoring shall occur after sunrise and before 12:00 p.m., whenever possible.
 6. Effluent samples for pH and temperature (grab) shall be taken simultaneously with each total ammonia grab sample. Un-ionized ammonia shall be calculated in accordance with the procedure provided by the Department (refer to the website www.dep.state.fl.us/labs/library/index.htm). All measured values for pH, temperature, and total ammonia used to calculate an un-ionized ammonia value shall be reported as an attachment to the Discharge Monitoring Report (DMR). All calculated un-ionized ammonia values shall be reported on the attachment. The daily maximum value for un-ionized ammonia for each reporting period shall be reported on the DMR.
 7. During plant operation, necessary measures shall be used to settle, filter, treat or absorb silt containing or pollutant-laden storm water runoff to limit the suspended solids to 50.0mg/L or less at Outfalls D-001 and D-002 during rainfall periods less than the 25-year, 24-hour rainfall event. As a minimum, control measures shall include filters, sediment traps, barriers, berms or vegetative planting. Exposed or disturbed soil shall be protected as soon as possible to minimize silt and sediment-laden runoff.
 8. The temperature at the edge of the mixing zone shall not exceed the limitations of Rule 62-302.520(4)(a), F.A.C. The mixing zone shall be a 380-foot radius semicircle centered at the point of entry into the unnamed reclaimed lake. The above-mentioned mixing zone boundary limit is defined based on ΔT (the calculated difference between the effluent daily average and the ambient daily average water temperature) not to exceed 4.7°F.

Within six months after the permit issuance date, the permittee shall install a continuous temperature monitoring sensor at the old mine cut, which is located upstream from the unnamed reclaimed lake, to determine the ambient water temperature. Following installation, the permittee shall report the maximum daily ΔT on the monthly DMR. The permittee shall submit a report to the Department in accordance with the schedule in Permit

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Condition VI.3. after 12 months of monitoring under this permit to evaluate and verify mixing zone performance within the unnamed reclaimed lake. If appropriate, the permit may be revised via a permit revision.

9. During the period beginning on the issuance date and lasting through the expiration date of this permit, the permittee is authorized to discharge reverse osmosis reject water, boiler blowdown, and lab waste from **Internal Outfall I-003, LOW VOLUME WASTE**, to the cooling reservoir. Such discharge shall be limited and monitored by the permittee as specified below:

Parameters (units)	Discharge Limitations			Monitoring Requirements		
	Monthly Average	Daily Maximum	Other	Monitoring Frequency	Sample Type	Sample Point
Flow (MGD)	Report	Report	--	Monthly	Calculated	FLW-2
Solids, Total Suspended (MG/L)	30.0	100.0	--	Monthly	Grab	OUI-1
Oil and Grease (MG/L)	15.0	20.0	--	Monthly	Grab	OUI-1
Selenium, Total Recoverable (UG/L)	Report	Report	--	Monthly	Grab	OUI-1

10. Effluent samples shall be taken at the monitoring site locations listed in Permit Condition I.A.9 and as described below:

Sample Point	Description of Monitoring Location
FLW-2	Flow measured continuously at overflow weir using an ultrasonic depth sensor.
OUI-1	The nearest accessible point after final treatment, but prior to entering the cooling reservoir.

11. During the period beginning on the issuance date and lasting through the expiration date of this permit, the permittee is authorized to discharge oily water waste effluent, slag pile leachate, and metal cleaning wastewater (MCW) from **Internal Outfall I-004, EQUALIZATION BASIN WASTEWATER**, to the cooling reservoir. Such discharge shall be limited and monitored by the permittee as specified below:

Parameters (units)	Discharge Limitations			Monitoring Requirements		
	Monthly Average	Daily Maximum	Other	Monitoring Frequency	Sample Type	Sample Point
Flow (MGD)	Report	Report	--	Monthly	Calculated	FLW-3
Solids, Total Suspended (MG/L)	30.0	100.0	--	Monthly	Grab	OUI-2
Oil and Grease (MG/L)	15.0	20.0	--	Monthly	Grab	OUI-2
Copper, Total Recoverable (MG/L)	1.0	1.0	--	Once Per Occurrence, When discharging MCW	Grab	OUI-2

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Parameters (units)	Discharge Limitations			Monitoring Requirements		
	Monthly Average	Daily Maximum	Other	Monitoring Frequency	Sample Type	Sample Point
Iron, Total Recoverable (MG/L)	1.0	1.0	--	Once Per Occurrence, When Discharging MCW	Grab	OUI-2
pH (SU)	--	9.0	6.0 Daily Minimum	Monthly	Grab	OUI-2
Selenium, Total Recoverable (UG/L)	Report	Report	--	Monthly	Grab	OUI-2

12. Effluent samples shall be taken at the monitoring site locations listed in Permit Condition I.A.11 and as described below:

Sample Point	Description of Monitoring Location
FLW-3	Overflow to sump; sump level controls sump pump operation. Pump time and flow rate used to calculate daily flows.
OUI-2	The nearest accessible point after final treatment, but prior to entering the cooling reservoir.

13. During the period beginning on the issuance date and lasting through the expiration date of this permit, the permittee is authorized to discharge stormwater runoff associated with industrial activity from **Outfall D-002, STORMWATER RUNOFF**. Such discharge shall be limited and monitored by the permittee as specified below:

Parameters (units)	Discharge Limitations			Monitoring Requirements		
	Monthly Average	Daily Maximum	Daily Minimum	Monitoring Frequency	Sample Type	Sample Point
Flow (MGD)	Report	Report	--	Weekly	Calculated	FLW-4
BOD, Carbonaceous 5 day, 20C (MG/L)	12.0	Report	--	Weekly	Grab	EFF-2
Solids, Total Suspended (MG/L)	Report	50.0	--	Weekly	Grab	EFF-2
Oil and Grease (MG/L)	Report	5.0	--	Weekly	Grab	EFF-2
pH (SU)	--	8.5	6.0	Weekly	Grab	EFF-2

14. Effluent samples shall be taken at the monitoring site locations listed in Permit Condition I.A.13 and as described below:

Sample Point	Description of Monitoring Location
FLW-4	Flow measured at the three discharge culverts using bubbler water level sensors. Sensors connected to a data logger in central laboratory for integrated daily average flow calculations.