

ATTACHMENT H

GROUNDWATER CONSTRUCTION, OPERATION AND MONITORING REQUIREMENTS

Progress Energy Florida, Inc.

Hines Energy Complex: Power Blocks 1, 2, 3, and 4

7700 County Road 555

Bartow, FL 33830

Polk County

Latitude: 27° 47' 21.12" N Longitude: 81° 58' 11.57" W

This Groundwater Construction, Operation and Monitoring Requirements (GWCOMR) is developed by the Licensee, Progress Energy Florida, Inc., in conjunction with the Florida Department of Environmental Protection Southwest District's Industrial Wastewater (IWW) Section and Groundwater Regulatory Section for the monitoring of the following sites (as defined in Rule 62-520.600, F.A.C.): the Cooling Pond (N-16), Wetlands Treatment System (SA-8), and the Brine Pond (SA-9).

The GWCOMR does not include monitoring conditions for proposed monitoring wells IMW-7 and IMW-8 associated with the optional solid waste disposal area (SA-8) that has yet to be constructed.

The Department's Southwest District IWW Section is responsible for reviewing and approving all revisions to this document in accordance with Section A, General Condition XXI. [Procedures for Post-Certification Submittals] and Section B, DEP Specific Condition I.G. [Groundwater Monitoring] of the Conditions of Certification.

New sources or deletion of existing sources of wastewater with changes to water quality standards, applications for a new Water Quality Criteria exemption pursuant to Rule 62-520.500 F.A.C., and improvements made at a treatment facility to provide for a new or expanded land application system with increase in the permitted capacity shall be submitted by the Licensee and reviewed by the Department for determination of modification or amendment to the existing license. If a determination is made that a modification to the Conditions is warranted, the Licensee shall submit a petition for modification to the Conditions of Certification to the Department for review and approval in accordance with Section 403.516, F.S. and 62-17.211, F.A.C.

FACILITY DESCRIPTION

WASTEWATER TREATMENT:

Wastewater discharges are directed to either the Cooling Pond or Brine Pond. These include wastewater from cooling systems; treated domestic wastewater; non-hazardous chemical cleaning and biocide wastes; and other non-hazardous. low volume wastestreams, pursuant to the federal definition found in 40 CFR Part 423.11, which include, but are not limited to, water pretreatment filter backwash, reverse osmosis (R.O.) reject, water treatment system cleaning wastes, boiler blowdown, laboratory and sampling streams, floor drains, treated water (service

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water), incidental leaks and spills from the power blocks and associated ancillary structures, discharges from power block sumps, and discharge from oil/water separators. In addition, cooling pond water may be directed to SA-8 Water Crop/Wetlands Treatment System; Contact stormwater (stormwater associated with industrial activity) is collected via the Plant Island Ditch (PID) stormwater system and directed to the zero-discharge Cooling Pond.

The additional alternative water supplies consist of reclaimed/IWW used to augment the cooling pond, including those supplies associated with receipt of City of Bartow reclaimed water and IWW from the PEF Tiger Bay Cogen. facility, Mosaic Fertilizer, LLC, and Estech, Inc. Water will be transferred from Mosaic's systems upstream from their final NPDES Outfalls, via pumping stations, to existing water crop areas P-3 and/or Lake Phosphoria located on Progress Energy property. From this point, water will follow the existing flow paths from and or through P-3 and Lake Phosphoria to the Triangle Lakes area, all of which may be used to store excess water. From the existing Triangle Lakes pump station, water can be pumped directly to the Hines Cooling Pond or other water crop storage areas. Water from the Estech, Inc. Agricola site will be pumped directly to the Tiger Bay Cogen. IWW transfer line, which discharges directly into the Cooling Pond.

I. SITE GROUNDWATER MONITORING

A. Construction Requirements

1. New IWW Monitoring Wells

Pursuant to COC Section B.I.G.2, involving updating the Hines IWW Ground Water Monitoring Plan (GWMP), construction of any new monitoring wells identified in the updated plan shall be completed within 90 days following Department approval of the GWMP. The following requirements apply to the construction of new monitoring wells:

- i. screen depth shall be no deeper than necessary to intercept the seasonal low ground water table; and
- ii. screen interval shall be no greater than 10 feet in length; and
- iii. the bottom of the monitoring well shall be above the highest tide elevation.

Within thirty (30) days after completion of construction or abandonment of new ground water monitor wells, the following information shall be submitted:

- a. A copy of the Southwest Florida Water Management District (SWFWMD) State of Florida Permit Application to Construct, Repair, Modify, or Abandon a Well (LEGR.040.01 (June 2010) 40D-3.101(1), F.A.C.) and
- b. A copy of the SWFWMD Well Completion Report (LEG-R.005.02 (June 2010) 40D-3.411(1)(a), F.A.C.), SWFWMD Well Completion Report, and DEP Form 62-520.900(3), Monitor Well Completion Report, for each well shall be submitted to the

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Southwest District IWW Section. The DEP form can be accessed at:

<http://www.dep.state.fl.us/water/groundwater/forms.htm>. [62-532.410 and 62-520.900(3)].

The information shall be sent to the Ground Water Regulatory Section, Southwest District office, Department of Environmental Protection, 13051 North Telecom Parkway, Temple Terrace, FL 33637.

2. The Licensee or the authorized representative shall give at least 72-hours notice to the Department's Southwest District Office, prior to the installation of any monitoring wells. [62-520.600(6)(h)]

3. Within sixty (60) days of completion of construction of new ground water monitoring wells and every 5 years thereafter, PEF shall sample **MWB-**, **MWC-5** and **MWC-1F** ground water monitor wells for the Primary and Secondary Drinking Water parameters included in Chapter 62-550, F.A.C., Public Drinking Water Systems, Fecal Coliform and EPA Methods 601 and 602 (for parameters not otherwise included in the Primary and Secondary Drinking Water parameters). The results from the initial sampling shall be used to determine the ambient concentrations of the parameters tested and shall be sent to the DEP's Industrial Wastewater Section, Southwest District Office.

4. The new wells shall be sampled quarterly for the parameters identified in Condition I.B.3 of this Attachment H. All field work done in connection with this GWCOMR regarding the collection of ground water samples shall be conducted in accordance with the Standard Operating Procedures (SOPs) described in DEP-SOP-001/01 (revised March 31, 2008, effective December 3, 2008), or as replaced by successor SOPs [Rule 62-160.210(1), F.A.C.]. All laboratory analyses done in connection with this GWCOMR shall be conducted by firms that hold certification from the Department of Health, Environmental Laboratory Certification Program under Chapter 64E-1, F.A.C. [Rule 62-160.300(1), F.A.C.]

5. Before construction of new ground water monitoring wells, a soil boring shall be made at each new monitoring well location to properly determine monitoring well specifications such as well depth, screen interval, screen slot, and filter pack. [62-520.600(6)(g)]

6. Within 90 days of completion of construction of the ground water monitor wells a surveyed drawing shall be submitted showing the location of all monitoring wells (active and abandoned) which will be horizontally located by metes and bounds or equivalent surveying techniques. The surveyed drawing shall include the monitor well identification number top of casing, and ground surface elevations referenced to National Geodetic Vertical Datum (NGVD) of 1929 to the nearest 0.01 foot, along with monitor well location latitude and longitude to the nearest 0.1 second. The survey shall be conducted by a Florida Registered Surveyor. A copy of the certified drawing shall be sent to the Industrial Wastewater Section, Southwest District Office, Department of Environmental Protection, 13051 N. Telecom Parkway, Temple Terrace, Florida 33637-0926. [62-520.600(6) (i)]

7. All piezometers and monitoring wells not part of this GWCOMR are to be plugged and abandoned in accordance with Rule 62-532.500(4), F.A.C., unless future use is intended. [62-532.500(4)]

B. Operational Requirements

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1. During the period of operation authorized by this Certification the Licensee shall continue to sample ground water at the monitoring wells identified in Section I.B.2 below, in accordance with the COC and GWCOMR prepared in accordance with Rule 62-520.600, F.A.C.

2. The following monitoring wells shall be sampled for Groundwater Monitoring requirements:

Monitoring Well ID	Alternate Well Name and/or Description of Monitoring Location	Aquifer Monitored	New or Existing
MWC-1F	Compliance well	Upper Floridan	Existing
MWB-1	Background well	Intermediate	Existing
MWC-2	Compliance well	Intermediate	Existing
MWC-3	Compliance well	Intermediate	Existing
MWC-4	Compliance well	Intermediate	Existing
MWC-5	Compliance well	Intermediate	Existing
MWC-6	Compliance well	Intermediate	Existing

MWB = Background; MWI = Intermediate; MWC = Compliance; MWP = Piezometer

3. The monitor wells specified in Condition.I.B.2 above shall be sampled for the parameters listed below:

Parameter Name	Compliance Well Limit	Units	Sample Type	Monitoring Frequency
Water Level Relative to NGVD*	Report	FEET	In-situ	Quarterly
Specific Conductance *	Report	UMHOS/CM	In-situ	Quarterly
pH *	6.5-8.5	SU	In-situ	Quarterly
Temperature Water *	NA	DEG.C	In-situ	Quarterly
Oxygen, Dissolved*	Report	MG/L	In-situ	Quarterly
Arsenic, Total	10	UG/L	Grab	Quarterly
Carbon, Total Organic (TOC)	Report	MG/L	Grab	Quarterly
Sodium, Total	160	MG/L	Grab	Quarterly
Fecal Coliform	Report	cts/100mL	Grab	Quarterly
Dissolved Solids, Total (TDS)	500	MG/L	Grab	Quarterly
Aluminum, Total	0.2	MG/L	Grab	Quarterly
Iron, Total	0.3	MG/L	Grab	Quarterly

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Parameter Name	Compliance Well Limit	Units	Sample Type	Monitoring Frequency
Manganese, Total	0.05	MG/L	Grab	Quarterly
Sulfate, Total	250	MG/L	Grab	Quarterly
Color	Report	CU	Grab	Quarterly
Nitrogen, Nitrate, Total (as N)	10.0	MG/L	Grab	Quarterly
Gross Alpha	15	pCi/L	Grab	Quarterly
Fluoride, Total	4.0	MG/L	Grab	Quarterly

* The field parameters shall be sampled per DEP–SOP-001/01, FS 2200 Ground Water Sampling, Figure FS 2200-2 Ground Water Purging Procedure (<http://www.dep.state.fl.us/water/sas/sop/sops.htm>) and recorded on Form FD 9000-24, Ground Water Sampling Log (<http://www.dep.state.fl.us/water/sas/qa/forms.htm>). The sampling logs shall be submitted with each ground water Part D DMR. The field parameters to be reported on Part D of GW DMR shall be the last sample recorded on FD 9000-24.

4. Water levels shall be recorded prior to evacuating the well for sample collection. Elevation references shall include the top of the well casing and land surface at each well site (NGVD allowable) at a precision of plus or minus 0.01 feet. [62-520.600(11)(c)].

5. Ground water monitoring wells shall be purged prior to sampling to obtain a representative sample. [62-160.210]

6. Analyses shall be conducted on un-filtered samples, unless filtered samples have been approved by the Department as being more representative of ground water conditions. [62-520.310(5)]

7. Ground water monitoring test results shall be submitted as required under Section B, DEP Specific Condition I.G.6 of the Conditions of Certification.

8. In the event of the addition of a new wastewater or water makeup source(s) to the cooling pond, a characterization will be required prior to discharge to the cooling pond.

Within six (6) months of startup for any new facilities, PEF shall provide separate waste stream characterizations for the cooling pond and brine pond. The cooling pond samples will be collected in the plant discharge side and will be considered as representative of the combined waste streams discharged to this impoundment. The brine pond samples will be collected in SA-9 and shall be considered as representative of the reverse osmosis, demineralizer, and any other waste (if applicable) discharges to this impoundment. Thereafter, a waste streams characterization shall be performed from a surface water sample collected from the cooling pond discharge side within six months of the completion of coal gasification units but in no event with less frequency than every 5 years.

The samples for characterization shall be analyzed for the Primary and Secondary Drinking Water Standards (Chapter 62-550, F.A.C), Fecal Coliform and the EPA Priority Pollutants. The components identified in the waste stream characterizations, and the leachate characterization pursuant to Section B, DEP Specific Condition I.I. [Solid Waste

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Storage and Disposal] of the Conditions of Certification as well as ground water indicator parameters may be used to modify the Ground Water Monitoring Plan. The results shall be sent to-the Groundwater Regulatory Section, Southwest District office.

9. Should the PEF wish to resample water quality analyses, taken pursuant to the GWCOMR, the PEF will do so within 15 days of the receipt of the first sampled water quality analyses. The Department will then consider the resample analyses to be acceptable; in any other event the original samples will be considered representative of formation waters by the Department and by PEF.

10. If the concentration for any constituent listed in Section I.B.3, in the natural background quality of the ground water is greater than the stated maximum, or in the case of pH is also less than the minimum, the representative background quality shall be the prevailing standard. [62-520.420(2)]

11. If any monitor well becomes damaged or inoperable, the Licensee shall notify the Department's SWD office the next business day from discovery, and a detailed written report shall follow within seven (7) days. The written report shall detail what problem has occurred and remedial measures that have been taken to prevent the recurrence. All monitoring well design and replacement shall be approved by the Department prior to installation. [62-520.600][62-620.320(6)]

II. SUPPORTING DOCUMENTATION

A. Drawings, plans, documents or specifications submitted by the Licensee, not attached hereto, but retained on file at the Southwest District Office, are made a part hereof.

B. Where required by Chapter 471 (P.E.) or Chapter 492 (P.G.) F.S., applicable portions of reports to be submitted as required by this GWCOMR shall be signed and sealed by the professional(s) who prepared them.

III. GENERAL CONDITIONS

A. This license does not relieve the Licensee from liability and penalties for harm or injury to human health or welfare, animal or plant life, or property caused by the construction or operation of this license source; nor does it allow the Licensee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department. The Licensee shall take all reasonable steps to minimize or prevent any discharge, reuse of reclaimed water, or residuals use or disposal in violation of this license which has a reasonable likelihood of adversely affecting human health or the environment. It shall not be a defense for a Licensee in an enforcement action that it would have been necessary to halt or reduce the Licensee activity in order to maintain compliance with the conditions of this license. [62-620.610(5)]

B. The Licensee shall report to the Department's Southwest District Office any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Licensee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Licensee becomes aware of the circumstances. The written submission shall contain a description of the

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noncompliance and its cause; the period of noncompliance including exact dates and time, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

1. The following shall be included as information which must be reported within 24 hours under this condition:

a. Any unanticipated bypass which causes any reclaimed water or effluent to exceed any authorized limitation or results in an unpermitted discharge;

b. Any upset which causes any reclaimed water or the effluent to exceed any limitation in the license;

c. Violation of a maximum daily discharge limitation for any of the pollutants specifically listed in the license for such notice; and

d. Any unauthorized discharge to surface or ground waters.

2. Oral reports as required by this subsection shall be provided as follows:

a. For unauthorized releases or spills of untreated or treated wastewater reported pursuant to subparagraph a.4 that are in excess of 1,000 gallons per incident, or where information indicates that public health or the environment will be endangered, oral reports shall be provided to the Department by calling the STATE WARNING POINT TOLL FREE NUMBER (800) 320-0519, as soon as practical, but no later than 24 hours from the time the Licensee becomes aware of the discharge. The Licensee, to the extent known, shall provide the following information to the State Warning Point:

i. Name, address, and telephone number of person reporting;

ii. Name, address, and telephone number of Licensee or responsible person for the discharge;

iii. Date and time of the discharge and status of discharge (ongoing or ceased);

iv. Characteristics of the wastewater spilled or released (untreated or treated, industrial or domestic wastewater);

v. Estimated amount of the discharge;

vi. Location or address of the discharge;

vii. Source and cause of the discharge;

viii. Whether the discharge was contained on-site, and cleanup actions taken to date;

ix. Description of area affected by the discharge, including name of water body affected, if any; and

x. Other persons or agencies contacted.

b. Oral reports, not otherwise required to be provided pursuant to subparagraph b.1 above, shall be provided to Department's Southwest District Office within 24 hours from the time the Licensee becomes aware of the circumstances.

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3. If the oral report has been received within 24 hours, the noncompliance has been corrected, and the noncompliance did not endanger health or the environment, the Department's Southwest District Office shall waive the written report. [62-620.610(20)]

C. Bypass Provisions.

1. "Bypass" means the intentional diversion of waste streams from any portion of a treatment works.

2. Bypass is prohibited, and the Department may take enforcement action against a Licensee for bypass, unless the Licensee affirmatively demonstrates that:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. The Licensee submitted notices as required under Condition III.C.3 of this Attachment H.

3. If the Licensee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least 10 days before the date of the bypass. The Licensee shall submit notice of an unanticipated bypass within 24 hours of learning about the bypass as required under Condition III.B. of this Attachment H. A notice shall include a description of the bypass and its cause; the period of the bypass, including exact dates and times; if the bypass has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent recurrence of the bypass.

4. The Department shall approve an anticipated bypass, after considering its adverse effect, if the Licensee demonstrates that it will meet the three conditions listed in Condition III.C.2 of this Attachment H.

5. A Licensee may allow any bypass to occur which does not cause reclaimed water or effluent limitations to be exceeded if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Condition III.C.2 through 4 of this Attachment H.

D. Upset Provisions

1. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the Licensee.

a. An upset does not include noncompliance caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, careless or improper operation.

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b. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of upset provisions of Rule 62-620.610, F.A.C., are met.

2. A Licensee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed contemporaneous operating logs, or other relevant evidence that:

a. An upset occurred and that the Licensee can identify the cause(s) of the upset;

b. The licensed facility was at the time being properly operated;

c. The Licensee submitted notice of the upset as required in Condition III.B of this Attachment H; and

d. The Licensee complied with any remedial measures required under Condition III.A of this Attachment H.

3. In any enforcement proceeding, the burden of proof for establishing the occurrence of an upset rests with the Licensee.

4. Before an enforcement proceeding is instituted, no representation made during the Department review of a claim that noncompliance was caused by an upset is final agency action subject to judicial review.

[62-620.610(23)]

E. The Licensee shall comply with all other applicable, non-procedural requirements found in Chapter 62-620.610 (1-23), F.A.C., as these relate to operation of the Hines Energy Complex industrial wastewater collection and treatment facilities.