Crystal River Nuclear Plant
15760 W. Power Line Street
Crystal River, FL 34428
Docket 50-302
Docket 72-1035
Operating License No. DPR-72

Environmental Protection Plan
(Non-Radiological)
Technical Specifications
Appendix B – Part II

May 18, 2016
3F0516-04

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-001

Subject: Crystal River Unit 3 – Reporting Related to the National Pollutant Discharge Elimination System (NPDES) Permit ID# FL0000159-018-IWB/MR

Dear Sir:

Duke Energy Florida, LLC, previously known as Duke Energy Florida, Inc. (DEF), hereby provides a copy to the Nuclear Regulatory Commission (NRC) of a revision to the NPDES Permit. This minor revision updated decriptions for the treatment systems associated with ancillary low-volume wastewater from the retired Crystal River Unit 3 Nuclear Plant (CR-3). This submittal is required by the CR-3 Facility Operating License, Appendix B – Part II, Environmental Protection Plan (Non-Radiological) Technical Specifications, Section 3.2, Reporting Related to the NPDES Permit.

Specifically, Section 3.2.3., states: "Changes and additions to the NPDES Permit shall be reported to the NRC within 30 days following the date the change is approved."

This letter establishes no regulatory commitments.

If you have any questions regarding this report, please contact Mr. Rod Gilbert, Environmental Field Support Specialist at (352) 563-4387.

Sincerely,

Phyllis A. Dixon
Technical Support Manager
Crystal River Nuclear Plant

PAD/mvs

Attachment: Crystal River Units 1, 2 and 3; and Citrus Combined Cycle Units PB-1 & PB-2
NPDES Permit FL0000159

xc: NMSS Project Manager
Regional Administrator, Region 1

DUKE ENERGY FLORIDA, LLC

CRYSTAL RIVER UNIT 3

DOCKET NUMBERS 72 - 1035 and 50 - 302 / LICENSE NUMBER DPR-72

REPORTING RELATED TO THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT ID# FL0000159-018-IWB/MR

ATTACHMENT

Crystal River Units 1, 2 and 3; and Citrus Combined Cycle Units PB-1 & PB-2 NPDES Permit FL0000159

Florida Department of Environmental Protection

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

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

May 5, 2016

SENT BY EMAIL TO:
(steven.marchigiano@duke-energy.com**)**

Mr. Steven Marchigiano
Duke Energy Florida, LLC
15760 West Power Line St.
Crystal River, FL 34428

Re: Duke Energy
Crystal River Units 1, 2 and 3; and Citrus Combined Cycle Units PB-1 & PB-2
NPDES Permit No. FL0000159
Minor Revision to Permit for Updating Unit 3 Wastewater Treatment Descriptions

Dear Mr. Marchigiano,

On April 19, 2016, the Florida Department of Environmental Protection (Department) received a minor revision application for the above referenced facility to update the descriptions for the treatment systems associated with ancillary low-volume wastewater from the retired Unit 3 nuclear unit. After review, the Department hereby approves the request pursuant to Rules 62-620.200(24), 62-620.200(25), and 62-620.325(2), Florida Administrative Code (F.A.C.). All other conditions of the permit shall remain the same except as specifically revised. Please attach this letter and the accompanying revised permit pages to NPDES Permit No. FL0000159. Note, this letter does not alter the April 6, 2019 expiration date or other specific or general conditions of the permit.

If you object to this permit revision you may petition for an administrative hearing in accordance with the enclosed Notice of Rights. If a petition is filed, then this permit revision does not become effective. If you have any questions regarding this permit revision, please contact Mr. Marc Harris, P.E., in the Industrial Wastewater Program at (850) 245-8589.

Sincerely,

Elsa Potts, P.E.
Program Administrator
Industrial Wastewater Program
Division of Water Resource Management

EAP/mh/hc

Attachment

cc: Ilia G. Balcom, Duke Energy Florida LLC (ilia.balcom@duke-energy.com)
Cindy Zhang-Torres, PE, FDEP SWD (cindy.zhang-torres@dep.state.fl.us)
Ramandeep Kaur, DEP Tampa (ramandeep.kaur@dep.state.fl.us)
Isabelle Riu, Sierra Club (isabelle.riu@sierraclub.org)

NOTICE OF RIGHTS

A person whose substantial interests are affected by this permit revision may petition for an administrative proceeding (hearing) in accordance with Section l20.57, Florida Statutes (F.S.). The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, within 14 days of receipt of this Permit. A petitioner, other than the applicant, shall mail a copy of the petition to the applicant at the address indicated in the attached letter at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section l20.57, F.S.

The Petition shall contain the following information:

(a) The name, address, and telephone number of each petitioner; the name, address, and telephone number of the petitioner's representative, if any; the Department case identification number and the county in which the subject matter or activity is located;
(b) A statement of how and when each petitioner received notice of the Department action;
(c) A statement of how each petitioner's substantial interests are affected by the Department action;
(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
(e) A statement of facts that the petitioner contends warrant reversal or modification of the Department action;
(f) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and
(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this intent. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this intent in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section l20.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

STATEMENT OF BASIS FOR MINOR PERMIT REVISION

Permit Number: FL0000159 Application Date: April 19, 2016
DEP File No: FL0000159-018-IWB/MR
Permit Writer: Heidi Coggins

I. SYNOPSIS OF APPLICATION

A. Name and Address of Applicant

Steven Marchigiano
Duke Energy Florida, LLC
15760 W. Power Line St.
Crystal River, FL 34428

For:

Crystal River Units 1, 2 and 3; and Citrus Combined Cycle Units PB-1 & PB-2
15760 West Power Line St.
Crystal River, FL 34428
Citrus County

B. Description of Proposed Activity:

Duke Energy Florida, LLC applied for a minor permit revision to the above referenced NPDES permit on April 19, 2016. The permittee requested that the descriptions of the treatment systems associated with ancillary low-volume wastewater from the retired Unit 3 nuclear unit, including descriptions for Outfall D-00F and Internal Outfalls I-FG and I-FE, be updated. This permit revision only updates the descriptions of the treatment systems and does not change effluent characteristics, effluent limitations, reporting requirements or permit conditions.

Change to Permit

The description of treatment facilities provided on the cover page of the permit have been revised as follows:

***Raw Water (RW) System Discharge system*:** The RW system is water pumped from the intake canal to the plant that discharges through the Outfall D-00F. The water collected is from the internal outfall (I-FG and I-FE) and Evaporator Condensate Storage Tanks (ECST).

***Station Drain Tank 1 (SDT-1) system*:** The SDT-1 is a regeneration waste neutralization tank or secondary drain Tank 1. The system uses neutralization and oil-water separation to control oil and grease as required, prior to discharge through internal outfall I-FG, it is isolated and sampled for treatment or batch release. The treated wastewater is then discharged by batch releases through internal outfall I-FG into the RW system to outfall D-00F, or alternatively to the percolation ponds under License No. PA 77-09P, or routed to discharge through the ECST outfall. The waste streams treated in this system include the following low volume waste

streams: turbine building sumps, equipment drains and floor drains; laboratory drains, rain water intrusion, and system leakage and testing.

***Evaporator Condensate Storage Tanks (ECST) system*:** The ECST system uses filtration and ion exchange system for pollution control as required. Spent resins are sluiced to a spent resin storage tank along with other spent resins (e.g., those used to polish water used for the spent fuel pool), whereby they are then disposed off-site. The treated sluice water is then discharged by batch releases through outfall D-00F. Wastewater is pumped to the Miscellaneous Waste Storage Tank that also receives stream from the reactor building sump

The ECST system consists of two tanks in the Auxiliary Building that collects wastewater from low volume wastes: floor drain, laboratories drain, system leakage, ion exchange resin sluice water, and cleaning activities.

***Laundry Shower and Sump Tanks (LSST) system*:** The LSST system consists of cartridge and bag filters to control total suspended solids and use a filtration treatment. Wastewater is pumped from the LSST sump to the LSST system. The LSST sump waste streams treated in this system include the following low volume wastes: building floor drains, laboratories drain, system leakage, and cleaning activities. The treated wastewater is discharged by batch releases through internal outfall I-FE into the RW to outfall D-00F. The alternative path is via the Auxiliary Building sump through the ECTS outfall.

This constitutes Revision C (Rev. C) to the permit. All changes to the permit are noted in Rev. C by underline or strike-through where changes have been made for this revision.

STATE OF FLORIDA
INDUSTRIAL WASTEWATER FACILITY PERMIT

PERMITTEE:
Duke Energy Florida, LLC (DEF)

RESPONSIBLE OFFICIAL:

Mr. Steven A. Marchigiano
Station Manager
Crystal River Units 1 & 2
15760 West Power Line Street, POC
Crystal River, FL 34428

PERMIT NUMBER: FL0000159 (Major)*(Rev. C)*
FILE NUMBER: FL0000159-018-IWB/MR
ISSUANCE DATE: **April 7, 2014**
REVISION DATE: *May 5, 2016*
EXPIRATION DATE: **April 6, 2019**

FACILITY:

Crystal River Units 1, 2 and 3; and Citrus Combined Cycle Units PB-1 & PB-2
15760 West Power Line Street
Crystal River, FL 34428
Citrus County
Latitude: 25° 57' 27" N Longitude: 82° 41' 58" 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. Compliance with Administrative Order AO024TL is a specific requirement of this permit. This permit does not constitute authorization to discharge wastewater other than as expressly stated in this permit. The above named permittee is hereby authorized to operate the facilities in accordance with the documents attached hereto and specifically described as follows:

FACILITY DESCRIPTION:

The Crystal River Energy Complex (CREC) is an electric generating plant located on an approximately 4,729 acre site near the mouth of Crystal River. The CREC consists of five steam electric generating units (Units 1, 2, 3, 4 and 5) with a total nameplate rating of 3,333.1 megawatts (MW). The surface water discharges from Units 4 and 5 are regulated under a separate wastewater permit (NPDES Permit No. FL0036366). Operation of an industrial wastewater treatment and disposal system to serve the facility is regulated under the Florida Electrical Power Plant Siting Act (License No. PA77-09). Units 1 and 2 are pulverized coal-fired steam electric generating units and Unit 3 is a nuclear fueled electric generating unit. However, Unit 3 has been shut down since September 2009, and the permittee announced on February 5, 2013 that the unit has been permanently retired. Units 1 and 2 have a combined total name plate rating of approximately 964 MW. The facility discharge consists of once-through, non-contact condenser cooling water, treated nuclear auxiliary cooling water, treated coal pile rainfall run off, intake screen wash water, and treated non-radioactive wastewater/radiation wastewater.

The radioactive component of the discharge is regulated by the U.S. Nuclear Regulatory Commission under Atomic Energy Act and not by the U.S. Environmental Protection Agency under the Clean Water Act.

Duke Energy Florida plans to construct and operate a nominal 1,640-MW natural gas-fired, combined cycle combustion turbine generator (CTG) facility, identified as the Citrus Combined Cycle (CCC) Project, on a 400-acre site immediately adjacent to the existing CREC. This facility will consist of two power blocks (PB-1 and PB-2), each consisting of two natural gas-fired combustion turbines and a single steam turbine. Each power block will be capable of generating 820 MW. The power blocks are anticipated to begin commercial operations in June 2018 and December 2018, respectively. Upon the CCC facility becoming operational, the permittee will begin the retirement of Units 1 and 2.

WASTEWATER TREATMENT:

Units 1 and 2 use once-through, noncontact cooling water (OTCW) withdrawn from and returned to Crystal Bay via the main intake and discharge canal at the facility. With the announced retirement of Unit 3 on February 5, 2013, this unit no longer discharges OTCW from outfall D-013. Unit 3 has not discharged OTCW since September 2009. This permit authorizes an

on-line mechanical condenser cleaning system, as well as use of oxidizing biocides, however, current practice is to remove Units 1 and 2 condensers out of service for manual cleaning.

Even with the announced retirement of Unit 3, Raw Water (RW) system discharge, Station Drain Tank-1 (SDT-1) system (non-radwaste treatment system), Evaporator Condensate Storage Tanks (ECST) system (radwaste treatment system) and Laundry Shower and Sump Tanks (LSST) system will remain in operation during the upcoming permit cycle due to the continued operation of ancillary processes. The process wastewaters generated by these systems will continue to be discharged from Outfall D-00F.

Raw Water System Discharge: *The RW system is water pumped from the intake canal to the plant that discharges through the Outfall D-00F. The water collected is from the internal outfall (I-FG and I-FE) and Evaporator Condensate Storage Tanks (ECST).*

Station Drain Tank 1 system: *The SDT-1 is a regeneration waste neutralization tank or secondary drain Tank 1. The system uses neutralization and oil-water separation to control oil and grease as required, prior to discharge through internal outfall I-FG, it is isolated and sampled for treatment or batch release*. The treated wastewater is *then* discharged by batch releases through internal outfall I-FG *into the Raw Water (RW) system* to outfall D-00F, or alternatively to the *on-site* industrial wastewater percolation *pond*s under License No. PA 77-09P, *or routed to discharge through the ECST outfall*. The waste streams treated in this system include the following low volume waste *streams*: ~~turbine building sumps,~~ *building floor drains,* equipment drains ~~and floor drains~~; laboratory *drains*, ~~wastes from system evaluation, water supply and intermediate cooling system laboratory waste; water leakage from auxiliary plant systems; wastewater from hydrolasing activities; and miscellaneous secondary-side system drainage.~~ *rain water intrusion, and system leakage and testing.*

***Evaporator Condensate Storage Tanks system*:** The ECST system uses *filtration* and ion exchange system for pollution control *as required*. Spent resins are sluiced to a spent resin storage tank along with other spent resins (e.g., those used to polish water used for the spent fuel pool), whereby they are then disposed off-site. The treated sluice water is then discharged by batch releases through outfall D-00F. *Wastewater is pumped to the Miscellaneous Waste Storage Tank that also receives stream from the reactor building sump*

The ECST system consists of two tanks in the Auxiliary Building that collects wastewater from low volume wastes: floor drain, laboratories drain, system leakage, ion exchange resin sluice water, and cleaning activities.

~~The ECST system also includes a waste storage tank that receives low volume wastes from a number of sources consisting mostly of sump and floor drains within the reactor and auxiliary buildings.~~

Note, these wastewaters are required to be monitored and meet limits for several radionuclides in accordance with the U.S. Nuclear Regulatory Commission under Atomic Energy Act and not by the U.S. Environmental Protection Agency under the Clean Water Act.

***Laundry Shower and Sump Tanks system*:** The LSST system consists of cartridge and bag filters to control total suspended solids and use a filtration treatment. *Wastewater is pumped from the LSST sump to the LSST system*. The treated wastewater is discharged by batch releases through internal outfall I-FE *into the RW* to outfall D-00F. *The alternative path is via the Auxiliary Building sump through the ECTS outfall*. The *LSST sump* waste streams treated in this system include the following low volume wastes: ~~laundry wash water; mop water; floor drain wastewater; laboratory wastewater from the primary, regent, and annex laboratories; leakage from auxiliary plant systems; and wastewater from hydrolasing activities.~~ building floor drains, laboratories drain, system leakage, and cleaning activities.

Mechanical draft helper cooling towers (HCTs), located adjacent to site discharge canal, withdraw water directly from the main discharge canal to provide additional cooling. The noncontact, once-through cooling water is then returned to the discharge canal through Outfalls D-071and D-072. In addition, the HCTs are authorized to inject an oxidizing biocide to control biofouling.

Outfalls D-091, D-092, D-093 and D-094 are discharges produced when water from the intake canal (for outfalls D-091, D-092 and D-093) and discharge canal (outfall D-094) is used to wash debris from the rotating traveling screens protecting the intake pumps at Units 1 and 2; the raw water pumps at Unit 3; and also the HCTs.