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April 22, 2010
L-2010-086
10 CFR 50.36

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Wastewater Permit Number FL0001562
Request for Minor Permit Modification Notification

In accordance with Section 3.2.3 of the Turkey Point Units 3 and 4 Environmental Protection Plan (Appendix B of Facility Operating Licenses DPR-31 and DPR-41), enclosed is a copy of the request to revise Wastewater Permit Number FL0001562. A minor revision is requested to allow the use of wood flour (fine wood sawdust) in the Turkey Point Units 3 and 4 condensers. Wood flour is to be applied through the cooling water system for the purpose of sealing small condenser tube leaks.

Should there be any questions, please contact Chip Bach, Turkey Point Chemistry Manager, at 305-246-6851.

Very truly yours,

Michael Kiley
Vice President
Turkey Point Nuclear Plant

Enclosure

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

C001
NRR

ENCLOSURE TO

L-2010-086

Florida Power & Light 9760 SW 344 St. Homestead, Florida 33035

April 21, 2010

Mr. Marc Harris, P.E.
Supervisor, Power Plant NPDES Permitting
Industrial Wastewater Section
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 3545
Tallahassee, Florida 32399-2400

RE: Florida Power & Light Company (FPL) - Turkey Point Nuclear Plant
State NPDES Permit No. FL0001562
Use of Wood Flour for Unit 4 Condenser Tubes - Required Monitoring

Dear Mr. Harris:

Enclosed please find the request for a minor modification to the State NPDES Permit No. FL0001562 - to use wood flour (fine wood sawdust) in the Turkey Point Nuclear Unit 3 and 4 condensers. Wood flour is to be applied through the cooling water system for the purpose of sealing small condenser tube leaks.

Attached are the following items to support this minor modification:

1. Four (4) signed, sealed copies of FDEP Form 62-620(9), "Application for a Minor Revision to a Wastewater Facility or Activity Permit" including Attachment 1 and 2 to Request Minor Modification.
2. An FPL check payable to the Florida Department of Environmental protection for the $250 application fee.

If you have any questions or need additional information on this matter, please contact Chip Bach, PTN Chemistry Manager, at 305-246-6851.

Sincerely,

Michael Kiley
Turkey Point Nuclear Plant Vice President
FPL Nuclear Division

Enclosures
cc: Tim Powell, FDEP, Southeast District
Michael Halpin, FDEP, Tallahassee
Robert Tomonto, FPL
Gary Anderson, FPL

APPLICATION FOR A MINOR REVISION TO A WASTEWATER FACILITY OR ACTIVITY PERMIT

1. Instructions

a. In accordance with Rule 62-620.325, F.A.C., this form must be submitted to the appropriate Department district office or approved local program when requests for minor revisions to a permit or minor modifications to a facility are made by a permittee, except for transfer of a permit to a new permittee and addition of a major user of reclaimed water to a Part III reuse system. Application for transfer of a permit to a new permittee shall be made on DEP Form 62-620.910(11). Application for addition of a major user of reclaimed water shall be made on DEP Form 62-610.300(4)(a)1.
b. Each applicable item must be completed in full in order to avoid delay in processing of this form. Where attached sheets or other technical documentation are provided, indicate appropriate cross-references.
c. Three (3) copies of this application with supporting documentation shall be submitted with this form.
d. All information is to be typed or printed in ink. Dates are to be entered in MM/DD/YR format.
e. This application and attachments shall be signed in accordance with Rule 62-620.305, F.A.C. Also, as applicable, this application and all attachments shall be signed and sealed by a professional engineer registered in Florida in accordance with Rule 62-620.310, F.A.C.

2. Facility Information

a. Permit Number: FL0001562 b. Facility Identification Number: FL0001562
c. Project/Facility Name: Florida Power & Light Company Turkey Point Plant Unit 3 & 4
d. Contact Name: Michael Kiley
Number and Street: 9760 SW 344 Street
City/State/Zip Code: Florida City, FL 33035
Telephone 305-246-6113

3. Type of Revision

☐ **Correct Typographical Errors**[1] - Submit one copy of each page of the permit showing revisions being requested.

☐ **Change Improvement Schedule**[1] - Provide a description of the improvement, a list of the dates to be revised, and a reason for the proposed change in each date.

☐ **Change Expiration Date of Permit**[1] - Provide the current and proposed expiration dates for the permit and the reasons for the proposed change.

☐ **Change Staffing Requirements**[2] - Describe the proposed change and submit justification for the change in accordance with Chapter 62-699, F.A.C.

[1] A processing fee is not required.
[2] A processing fee is required with the application in accordance with Rule 62-4.050, F.A.C.

☐ **Change Monitoring and Reporting Requirements**[2] - Describe the proposed change and submit justification for the change in accordance with Chapter 62-601, F.A.C.

☐ **Modify Approved Pretreatment Program**[1] - Describe the proposed modification and provide the information required by Rule 62-625.540, F.A.C.

☐ **Delete Point Source Outfall**[1] - Identify the outfall and explain why the outfall is being eliminated.

☐ **Modify or Expand Approved Residuals Land Application Sites**[2] - Attach a new or updated Agricultural Use or Dedicated Site Plan as required by Chapter 62-640, F.A.C.

☒ **Minor Modification to the Facility**[2] - Provide a description of the proposed modification. If applicable, attach any reports, plans, and specifications which have been developed to implement this modification.

☐ **Other**[2] - Provide appropriate documentation. Describe.

4. Certifications

a. Applicant or Authorized Representative

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Michael Kiley — 4/22/10

(Signature of Applicant or Authorized Representative[3]) (Date)

Name (please type) Michael Kiley Company Name Florida Power & Light Company
Title Plant Vice President Company Address: 9760 S.W. 344 Street
Phone: 305-246-6113 City/State/Zip Code: Florida City, Fl 33035

b. Professional Engineer Registered in Florida

I certify that the engineering features of this project have been (designed) (examined) by me and found to conform to engineering principles applicable to such projects. In my professional judgement, this facility, when properly constructed, operated, and maintained, will comply with all applicable statutes of the State of Florida and rules of the Department.

Name (please type): Edward Preast
Florida Registration Number: 33225
Company Name: Florida Power & Light Company
Company Address: 700 Universe Blvd.
City/State/Zip Code: Juno Beach Florida 33408
Phone Number: 561-346-5312

Edward Preast 4-21-10 FL # 33225

(Seal, Signature, Date, and Registration Number)

[3]If signed by the authorized representative, attach a letter of authorization in accordance Rule 62-620.305, F.A.C.

Attachment 1

Reason for Request:

The FPL Turkey Point Nuclear Plant occasionally experiences very small cooling water leaks into the steam condensers on each Unit. The leakage is into the condensers because they are under a vacuum so saline cooling canal water leaks in rather than feedwater leaking out. The calculated saline cooling water in-leakage is less than 200 mls per day, but is large enough to produce elevated chloride and sodium contamination in the secondary system feedwater in the steam generators. This continual elevated contamination level is detrimental to the long term reliability of the steam generator tubes. Please note that this leakage is occurring in the "secondary" side of the plant, which is identical to the same system in a fossil-fired plant, and is not a "radiological" issue.

Turkey Point Nuclear has taken several corrective actions, such as helium leak searching the condenser water boxes, but has been unable to identify the leaking tubes. Industry experts have been queried and concur that there is no practical method of identifying such small leaks.

Industry experience has, however, reported success using wood flour (fine, hard wood dust) to temporally plug small condenser leaks. Turkey Point Nuclear has recently conducted a maintenance activity using wood flour, as approved by the FDEP, and FPL requests to be permitted for future use when similar events occur.

Proposed Application:

The Turkey Point Nuclear Plant is requesting permission for periodic wood flour additions to the cooling water system of the suspect leaking condenser water boxes. Through discussion with peers and review of other plant (i.e.; nuclear plants in other states) practices, we have developed the following plan. All quantities and frequencies are the maximum proposed and would be reduced if not necessary.

Hard wood flour (see Attachment 2 for MSDS) would be added to the inlet side of the condenser at a rate of 60 cubic feet (~1,000 lbs) of wood flour per treatment. Each treatment would last as long as it takes to pump the plugging media into the cooling water system for a specific condenser water box.

Following treatment, condenser and steam generator contaminant levels would have to be tracked for a day to determine if the treatment was successful. Only one condenser will be treated at a time and only one treatment will be preformed per week, not to exceed 24 treatments in a year.

Maximum particulate loading of the cooling water system can be estimated using the following assumptions;

1. Circulating water design flow is 650,000 gpm per unit, for a total of 1,300,000 gpm with both units running. For the purpose of this evaluation, both units are

assumed to be in service with normal circulating water flow. Units 1 and 2 also provide circulating water that is mixed with the total flow back to the canal system, however, zero dilution is credited from units 1 or 2.

2. 1000 lbs of wood flour is discharged into the intake at a maximum rate of 200 lbs per minute.
3. The application of wood flour will be to one intake structure; however it will be fully mixed with the total circulating water flow of 1,300,000 gpm within 25-50 yards of the discharge structure.

The calculation for the concentration of wood flour at the mixed discharge is calculated as:

$$\frac{200lb/\min * 453.59gram/lb}{1{,}300{,}000gal/\min * 3.785liter/gal} = 0.0184gram/liter = 18.4milligram/liter$$

Attachment 2 is a Product data sheet for the wood flour.

FPL will abide by the monitoring requirements specified in the maintenance activity approval letter received from Marc Harris on September 23, 2009. Please refer to your files regarding our previous request to use wood flour in order to expedite your review of this minor permit modification request. FPL submitted the required cooling canal sample analysis data to your office on December 28, 2009. Copies of these above referenced transmittals are attached.

Florida Department of
Environmental Protection

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

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

September 23, 2009

BY CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. John Jones
Power Generation Division
Florida Power & Light Company
P.O. Box 14000
Juno Beach, Florida 33408-0420

Re: Florida Power & Light Company
Turkey Point Power Plant
NPDES Permit No. FL0001562
Use of Wood Flour for Unit 4 Condenser Tubes

Dear Mr. Jones:

Thank you for the information that you provided in your e-mails received on August 14 and September 15, regarding use of wood flour (40 mesh, additive-free, pine sawdust) to temporarily repair pinhole leaks in the Turkey Point Unit 4 cooling water condenser tubes. The Department has reviewed the information and understands that Florida Power & Light Company (FPL) is conducting necessary temporary repairs to the Unit 4 condenser tubes to reduce in-leakage of hypersaline cooling water into the secondary side. FPL will use a maximum of 1,000 pounds of wood flour per weekly application at a maximum rate of 200 pounds a minute. The wood flour shall be used until the next Turkey Point Unit 4 refueling outage (currently scheduled to begin on October 25, 2009), or until November 1, 2009, whichever date is earlier. FPL will conduct more permanent repairs during the refueling outage. Furthermore, FPL will discontinue the use of wood flour if after three applications FPL has determined that the wood flour is ineffective.

On this basis, the Department concurs that the proposed project can be considered "construction, replacement, or repair of components of an industrial site or plant," pursuant to Rule 62-620.200(26)(b), Florida Administrative Code. Moreover, repairing in-leakage or cooling water into the secondary side generally conforms to preventive maintenance BMPs required by permit under the NPDES program. Therefore, the project, as described herein, does not require a permit revision. It should be noted, however, that the use of wood flour past November 1, 2009, requires an application by FPL to revise the above referenced NDPES permit.

When discharging wood flour to the cooling canal system, FPL shall comply with the monitoring requirements in Table 1 of Attachment A. Please submit analytical results to the Department.

Thank you again, and don't hesitate to contact either Bala Nori or me with any questions at (850) 245-8589.

Sincerely,

Marc Harris, P.E.
Supervisor, Power Plant NPDES Permitting
Industrial Wastewater Section

cc: Tim Powell, P.E., DEP Southeast District

Attachment A

Table 1 –Monitoring Requirements for Use of Wood Flour at FPL Turkey Point Unit 4

	Discharge Limitations			*Monitoring Requirements*		
Parameters (units)	**Monthly Average**	**Daily Maximum**	**Daily Minimum**	**Monitoring Frequency**	**Sample Type**	**Sample Point(s)**
pH (su)	--	Report	Report	Weekly, When Applying Wood Flour	Grab	Unit 4 Cooling Water Discharge
Solids, Total Dissolved (TDS) (mg/L)	--	Report	--	Weekly, When Applying Wood Flour	Grab	Unit 4 Cooling Water Discharge
Solids, Total Suspended (TSS) (mg/L)	--	Report	--	Weekly, When Applying Wood Flour	Grab	Unit 4 Cooling Water Discharge
Turbidity (NTU)	--	Report	--	Weekly, When Applying Wood Flour	Grab	Unit 4 Cooling Water Discharge
Sodium (mg/L)	--	Report	--	Weekly, When Applying Wood Flour	Grab	Secondary Side Water System
Chlorides (mg/L)	--	Report	--	Weekly, When Applying Wood Flour	Grab	Secondary Side Water System & Unit 4 Cooling Water Discharge
Specific Conductivity(umhos)	--	Report	--	Weekly, When Applying Wood Flour	Grab	Secondary Side Water System & Unit 4 Cooling Water Discharge

Florida Power & Light 700 Universe Blvd. Juno Beach, Florida 33408

December 28, 2009

Mr. Marc Harris, P.E.
Supervisor, Power Plant NPDES Permitting
Industrial Wastewater Section
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 3545
Tallahassee, Florida 32399-2400

RE: Florida Power & Light Company (FPL) - Turkey Point Nuclear Plant
State NPDES Permit No. FL0001562
Use of Wood Flour for Unit 4 Condenser Tubes - Required Monitoring

Dear Mr. Harris:

Enclosed please find the results of the requested cooling canal monitoring associated with the use of wood flour (fine wood sawdust) in the Turkey Point Nuclear Unit 4 once-through cooling water system for the purpose of sealing small condenser tube leaks.

If you have any questions or need additional information on this matter, please contact Chip Bach, PTN Chemistry Manager, at 305-246-6851.

Sincerely,

John Jones
Environmental Manager
FPL Nuclear Division

.Enclosures
cc: DEP, Southeast District
Nicholas (Chip) Bach, PTN

Monitoring Requirements for use of Wood Flour at FPL Turkey Point Nuclear Unit 4

Parameters (units)	Sample Point	Date/Time	Results
pH (su)	Cooling Water Discharge	10/5/2009 @1130 hours	8.2
Solids, Total Dissolved (TDS) (mg/L)	Cooling Water Discharge	10/5/2009 @1130 hours	59,000
Solids, Total Suspended (TSS) (mg/L)	Cooling Water Discharge	10/5/2009 @1130 hours	9
Turbidity (NTU)	Cooling Water Discharge	10/5/2009 @1130 hours	2.9
Sodium (mg/L)	Secondary Side Water System	10/5/2009 @1130 hours	0.00005
Chlorides (mg/L)	Cooling Water Discharge	10/5/2009 @1130 hours	36,000
	Secondary Side Water System	10/5/2009 @1130 hours	0.0001
Specific Conductance (umhos)	Cooling Water Discharge	10/5/2009 @1130 hours	80,000
	Secondary Side Water System	10/5/2009 @1130 hours	20.3

Monitoring Requirements for use of Wood Flour at FPL Turkey Point Nuclear Unit 4

Parameters (units)	Sample Point	Date/Time	Results
pH (su)	Cooling Water Discharge	10/12/2009 @0820 hours	8.2
Solids, Total Dissolved (TDS) (mg/L)	Cooling Water Discharge	10/12/2009 @0820 hours	65,000
Solids, Total Suspended (TSS) (mg/L)	Cooling Water Discharge	10/12/2009 @0820 hours	12
Turbidity (NTU)	Cooling Water Discharge	10/12/2009 @0820 hours	3.6
Sodium (mg/L)	Secondary Side Water System	10/12/2009 @0820 hours	0.00004
Chlorides (mg/L)	Cooling Water Discharge	10/12/2009 @0820 hours	41,000
	Secondary Side Water System	10/12/2009 @0820 hours	0.00008
Specific Conductance (umhos)	Cooling Water Discharge	10/12/2009 @0820 hours	83,000
	Secondary Side Water System	10/12/2009 @0820 hours	23.7

AMERICAN WOOD FIBERS

www.awf.com

9841 Broken Land Parkway
Suite 302
Columbia, Maryland 21046
(800) 624-9663 or (410) 290-8700

Industrial Sales Office
100 Alderson Street
Schofield, WI 54476-0468
(800) 642-5448 or (715) 355-1900

Material Safety Data Sheet

TRADE NAME **Wood Flour:** Maple, Ponderosa Pine, Oak, Spruce, Southern Yellow Pine, Cedar. All Species – All Grades

SYNONYMS None
CAS. NO. 9004-34-6 (Cellulose)
TSCA LIST Not Regulated

NFPA Hazard Label	Health	Flammability	Reactivity	Special Notice
	1	1	0	None

DESCRIPTION
Particles generated by any manual or mechanical cutting or abrasion process performed on wood.

PHYSICAL DATA

Boiling Point	Not Applicable
Specific Gravity	Variable-dependent on wood species and moisture content.)
Vapor Density	Not Applicable
Percent Volatiles by Volume	Not Applicable
Melting Point	Not Applicable
Vapor Pressure	Not Applicable
Solubility in H_20 (% by weight)	Insoluble
Evaporation Rate (Butyl Acetate = 1)	Not Applicable
pH	Not Applicable
Appearance and Odor	Light to dark colored granular solid. Color and odor are dependent on the wood species and time since dust was generated.

FIRE AND EXPLOSION DATA

Flash Point	Not Applicable
Auto-ignition Temperature	Variable (typically 400-500□ F)
Explosive Limits in Air	40 grams/M^3 (LEL)
Extinguishing Media	Water, CO_2, Sand
Special Fire Fighting Procedures	Use water to wet down dust to reduce the likelihood of ignition or dispersion of dust into the air. Remove burned or wet dust to open area after fire is extinguished.
Unusual Fire and Explosion Hazard	Wood dust is a strong to severe explosion hazard if a dust "cloud" contacts an ignition source.

HEALTH EFFECTS INFORMATION

Exposure Limit	ACGIH TLV®: TWA-5.0 mg/m^3; STEL (15 min.) – 10 mg/m^3 (softwood) TWA – 1.0 mg/m^3 (certain hardwoods such as beech or oak) OSHA PEL: TWA – 15.0 mg/m^3 (total dust); 5.0 mg/m^3 (respirable fraction) Western red cedar: TWA – 2.5 mg/m^3
Skin and Eye Contact	Wood dust can cause eye irritation. Various species of wood dust can elicit allergic contact dermatitis in sensitized individuals.

[1] *See footnote below concerning OSHA PELs for wood dust*

[1] In AFL-CIO v. OSHA 965 F. 2d 962 (11th Cir. 1992) the court overturned OSHA's 1989 Air Contaminants Rule, including the specific PELs for wood dust that OSHA had established at that time THE 1989 PELS WERE: TWA – 5.0 mg/m^3; STEL (15 MIN.) – 10.0 mg/m^3 (ALL SOFT AND HARD WOODS EXCEPT WESTERN RED CEDAR); WESTERN RED CEDAR: TWA – 2.5 mg/m^3.

Wood dust is now officially regulated as an organic dust under the Particulates Not Otherwise Regulated (PNOR) or Inert or Nuisance Dust categories at PELs noted under Health Effects information section of the MSDS. However, A NUMBER OF STATES HAVE INCORPORATED PROVISIONS OF THE 1989 STANDARD IN THEIR STATE PLANS. ADDITIONALLY, OSHA HAS ANNOUNCED THAT IT MAY CITE COMPANIES UNDER THE OSH ACT GENERAL DUTY CLAUSE UNDER APPROPRIATE CIRCUMSTANCES FOR NON-COMPLIANCE WITH THE 1989 PELS.

HEALTH EFFECTS INFORMATION (Con'd.)

Ingestion	Not Applicable
Skin Absorption	Not known to occur
Chronic Effects	Wood dust, depending on species, may cause dermatitis on prolonged, repetitive contact; may cause respiratory sensitization and/or irritation. IARC classifies wood dust as a carcinogen to humans (Group 1). This classification is based primarily on IARC's evaluation of increased risk in the occurrence of adenocarcinomas of the nasal cavities and para nasal sinuses associated with exposure to wood dust. IARC did not find sufficient evidence to associate cancers of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon or rectum with exposure to wood dust.

REACTIVITY DATA

Conditions Contributing to Instability	Stable under normal conditions.
Incompatibility	Avoid contact with oxidizing agents and drying oils. Avoid open flame. Product may ignite at temperatures in excess of 400° F.
Hazardous Decomposition Products	Thermal-oxidative degradation of wood produces irritating and toxic fumes and gases, including CO, aldehydes and organic acids.
Conditions Contributing to Polymerization	Not Applicable

PRECAUTIONS AND SAFE HANDLING

- Avoid Eye Contact.
- Avoid Repeated or Prolonged Contact with Skin. Careful bathing and clean clothes are indicated after exposure.
- Avoid Prolonged or Repeated Breathing of Wood Dust in Air.
- Avoid Contact with Oxidizing Agents and Drying Oils.
- Avoid Open Flame.

GENERALLY APPLICABLE CONTROL MEASURES

Ventilation: Provide adequate general and local exhaust ventilation to maintain healthful working conditions.

Wear goggles or safety glasses. Other protective equipment such as gloves and approved dust respirators may be needed depending upon dust conditions.

EMERGENCY AND FIRST AID PROCEDURES

Eyes	Flush with water to remove dust particles. If irritation persists, get medical attention.
Skin	If a rash or persistent irritation or dermatitis occurs, get medical advice before returning to work where wood dust is present.
Inhalation	Remove to fresh air. If persistent irritation, severe coughing, breathing difficulties occur, get medical advice before returning to work where wood dust is present.
Ingestion	Not Applicable.

SPILL/LEAK CLEAN-UP PROCEDURES

Sweep or vacuum spills for recovery or disposal; avoiding creating dust conditions. Provide good ventilation where dust conditions may occur. Place recovered wood dust in a container for disposal.

****

IMPORTANT: *The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. American Wood Fibers and API/NFPA/LMA or VA makes no warranty of any kind, express or implied, concerning the accuracy or completeness of the information and data herein. American Wood Fibers and API/NFPA/LMA or VA will not be liable for claims relating to any party's use of or reliance on information and data contained herein regardless of whether it is claimed that the information and data are inaccurate, incomplete or otherwise misleading.*