

August 19, 1999 3F0899-16

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

Report Required by Environmental Protection Plan Subject:

Dear Sir:

The Crystal River Unit 3 (CR-3) Environmental Protection Plan (EPP), Appendix B of the CR-3 Operating License establishes reporting requirements related to the National Pollutant Discharge Elimination System (NPDES) Permit. The EPP in Section 3.2.4 requires that NRC be notified of proposed changes to the NPDES permit.

FPC is requesting the State of Florida Department of Environmental Protection to make changes in the NPDES permit to modify conditions on the use of biocide in the instrument air compressor system. The attached NPDES permit modification request fully describes this proposed change.

There are no new regulatory commitments made in this submittal.

If you have any questions regarding this submittal, please contact Mr. Sid Powell, Manager, Nuclear Licensing at (352) 563-4883.

Sincerely,

SLBynhost

S.L. Bernhoft Director, Nuclear Regulatory Affairs

SLB/smg

9908300221 990819 PDR ADOCK 05000302 Attachment

xc: Regional Administrator, Region II Senior Resident Inspector NRR Project Manager



August 19, 1999

Ms. Wanda Parker-Garvin Industrial Wastewater Section Florida Department of Environmental Protection Twin Towers Office Building 2600 Blair Stone Road Tallahassee, FL 32399-2400

Dear Ms. Parker-Garvin:

Re: Florida Power Corporation Crystal River Unit Three Evaporative Cooler Permit Amendment NPDES Permit Number FL0000159

Florida Power Corporation (FPC) requests an amendment to the June 30, 1999 minor revision to the above referenced permit regarding discharge of wastewater from a new evaporative cooler being installed at Crystal River Unit 3. This evaporative cooler is part of a new instrument air compressor that is being installed to improve reliability.

The current permit amendment applies numeric and toxicity limitations at internal outfall I-FG instead of external outfall D-OF. In lieu of these limitations, FPC is proposing new compliance limitations described below:

<u>Numeric Limitations</u> The expected discharge concentrations at the regulated outfall I-FG and D-OF are lower than the method detection limits for the applicable analytical methods. Therefore, FPC believes it is more appropriate to base compliance on application rates of these chemicals. FPC requests the frequency and quantity data in the following table be used as the basis for permit limitations.

Chemical Product	Application Frequency	Quantity Per Applica- tion	Worst Case D-OF Discharge Concentration	Normal D-OF Discharge Concentration	NOEC Levels	Minimum Detection Levels
Spectrus NX1000	2/week	90 ml	0.08 ppm	0.01 ppm	1.8 ppm	25 ppm
Spectrus NX1103	2/week	90 ml	0.08 ppm	0.01 ppm	0.14 ppm	0.3 ppm
Dianodic DN2140	Continuous	(1)	3.3 ppm	0.47 ppm	790 ppm	22 ppm
Foamtrol AF1440	2/week	90 ml	0.08 ppm	0.01 ppm	37 ppm	(2)

<sup>(1)</sup> Product will be feed continuously to achieve a steady-state concentration of 130 ± 50 ppm in the evaporative cooler. FPC would monitor the evaporative cooler water monthly to determine the concentration.

> One Power Plaza • 263 - 13<sup>th</sup> Avenue South • St. Petersburg, FL 33701-5511 P.O. Box 14042 • St. Petersburg, FL 33733-4042 • (727) 820-5151 A Florida Progress Company

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<sup>(2)</sup> This product is essentially mineral oil and would be limited by the existing oil and grease limits that apply to both internal outfall I-FG and outfall D-OF.

Attachment 1 contains the calculations used to derive the values expressed in the above table.

<u>Toxicity Criteria</u> FPC requests the toxicity testing requirements be amended to require toxicity testing at outfall D-OF. This is the outfall to waters of the state where the toxicity standards apply. FPC also requests the toxicity testing requirement be changed to require the testing frequency of once per week. This will allow for better coordination of the testing organisms and provide more representative results.

FPC also requests that three toxicity tests be performed. FPC will also perform a toxicity test at the internal outfall I-FG for informational purposes only, not to be used as a compliance determination. FPC believes this approach is warranted since the manufacturer, Betz Dearborn, has performed toxicity tests on these products to determine the NOEC levels. As the above table indicates, the discharge concentrations of these products would be significantly lower than the NOEC levels.

Your consideration of these requests is greatly appreciated. Please contact me at 727-826-4283 if you have any questions or comments.

Sincerely

Kent D. Hedrick PE Manager, Environmental Programs

# ATTACHMENT 1

### **BIOCIDE and FOAMTROL CONCENTRATION CALCULATIONS**

### ASSUMPTIONS

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- 1. Normal SDT-1 discharge volume is 75,000 gallons.
- 2. The plant effluent added to SDT-1 averaged 130,000 gallons per week in 1998 based on the average SDT-1 empty cycle of every four days. This volume is considered higher that normal so for this calculation a volume of 100,000 gallons of plant effluent to SDT-1 will be used.
- 3. Each Evaporative cooler should discharge approximately 1.1 gpm to drain. For this calculation it will be assumed that 1 Evaporative Cooler will run 100% of the time and one will run 50% of the time. Thus the effluent from the evaporative coolers will be assumed to be 17,000 gallons per week.
- The mixing flow rate from SD'1-1 is assumed to be 250 gpm and the Raw Water Flow Rate is assumed to be 9700 gpm.

#### CALCULATIONS:

Liquid Volume to SDT-1 from the Evaporative Coolers

1.65 gal/min X 60 min/hour X 24 hour/day X 7 day/week = 16,632 gal/wk

Biocide/ Foamtrol Addition

45 ml/addition X 2 additions/wk X 2 units = 180 ml/week

180 ml/wk / 946 ml/qt / 4 qt/gal = .05 gal/wk

Liquid Volume to SDT-1 from the Evaporative Coolers with plant dilution.

100,000 gal/wk (normal Plant) + 17,000 gal/wk ( evap coolers) = 117,000

Expected SDT-1 biocide/foamtrol concentration with no plant effluent added

0.05 gal biocide / 17,000 gal water = 2.9 ppm

Expected SDT-1 biocide/foamtrol concentration with normal plant effluent added

0.05 gal biocide / 117,000 gal water = .43 ppm

Expected discharge effluent biocide/foamtrol concentration with no plant effluent to SDT-1

2.9 ppm X 250 gal / 9700gal = 0.0747

Expected discharge effluent biocide/foamtrol concentration with normal plant effluent added to SDT-1 =

0.43 ppm X 250 gal / 9700gal = 0.01 ppm

## SCALE INHIBITOR CONCENTRATION CALCULATIONS

### ASSUMPTIONS

- 1) .Normal SDT-1 discharge volume is 75,000 gallons.
- 2) The plant effluent added to SDT-1 averaged 130,000 gallons per week in 1998 based on the average SDT-1 empty cycle of every four days. This volume is considered higher that normal so for this calculation a volume of 100,000 gallons of plant effluent to SDT-1 will be used.
- 3) Each Evaporative cooler should discharge approximately 1.1 gpm to drain. For this calculation it will be assumed that 1 Evaporative Cooler will run 100% of the time and one will run 50% of the time. Thus the effluent from the evaporative coolers will be assumed to be 17,000 gallons per week.
- 4) The mixing flow rate from SDT-1 is assumed to be 250 gpm and the Raw Water Flow Rate is assumed to be 9700 gpm.

### CALCULATIONS:

Liquid Volume to SDT-1 from the Evaporative Coolers

1.65 gal/min X 60 min/hour X 24 hour/day X 7 day/week = 16,632 gal/wk

### Dianoic Addition

127 ppm continous feed as needed to maintain a 14 ppm OPO4 level

Expected SDT-1 Dianoic concentration with no plant effluent added

127 ppm

Liquid Volume to SDT-1 from the Evaporative Coolers with plant dilution.

100,000 gal/wk (normal Plant) + 17,000 gal/wk ( evap coolers) = 117,000

Expected SDT-1 Dianoic concentration with normal plant effluent added

17,000/117,000 x 127 ppm = 18.4 ppm

Expected discharge effluent Dianoic concentration with no plant effluent to SDT-1

127 ppm X 250 gal / 9700gal = 3.3 ppm

Expected discharge effluent Dianoic concentration with normal plant effluent to SDT-1

18.4 ppm X 250 gal / 9700gal = 0.47 ppm