



November 16, 1999

L-99-232
10 CFR 50.4

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

Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Generic Letter 99-02 Response

The purpose of this letter is to provide the Florida Power & Light Company (FPL) response to Generic Letter (GL) 99-02, *Laboratory Testing of Nuclear-Grade Activated Charcoal*, for St. Lucie Units 1 and 2. The 180-day response to GL 99-02 for St. Lucie Units 1 and 2 is attached. FPL plans to submit the Technical Specification (TS) amendment requests to require charcoal testing to the ASTM D3803-1989 protocol by November 30, 1999.

On June 3, 1999, the NRC issued GL 99-02 to alert licensees that testing nuclear-grade activated charcoal to standards other than American Society for Testing and Materials (ASTM) D3803-1989, *Standard Test Method for Nuclear-Grade Activated Carbon*, may not be conservative. On August 23, 1999, the NRC issued an errata notice supplement to GL 99-02. The NRC requested all licensees determine whether their TS reference ASTM D3803-1989 for charcoal filter laboratory testing. Licensees, whose TS do not reference ASTM D3803-1989, were requested to either amend their TS to reference ASTM D3803-1989 or propose an alternative test protocol.

FPL plans to follow the recommendations of the GL. St. Lucie Units 1 and 2 meet the GL 99-02 definition of *Group 2* plants. For *Group 2* plants, charcoal testing is in compliance with the current Technical Specifications that require charcoal tests using a test protocol other than ASTM D3803-1989.

For St. Lucie Unit 1, the last laboratory test of nuclear-grade activated charcoal filters was completed prior to August 2, 1999. This testing was completed in compliance with the current TS. The next charcoal test is scheduled for the spring of 2001. The next test will be performed in accordance with ASTM D3803-1989 or the charcoal will be replaced with charcoal tested in accordance with ASTM D3803-1989.

For St. Lucie Unit 2, the next charcoal test is scheduled for the spring of 2000. The testing will be performed in accordance with ASTM D3803-1989 or the charcoal will be replaced with charcoal tested in accordance with ASTM D3803-1989.

AOB 1

St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
L-99-232 Page 2

This letter contains four new regulatory commitments. FPL plans to submit the Technical Specification (TS) amendment requests to require charcoal testing to the ASTM D3803-1989 protocol by November 30, 1999. The next St. Lucie Unit 2 charcoal test is scheduled for the spring of 2000. The next charcoal test for St. Lucie Unit 1 is scheduled for the spring of 2001. The above two and future tests will be performed in accordance with the ASTM D3803-1989 test protocol or the charcoal will be replaced with charcoal tested in accordance with the ASTM D3803-1989 test protocol.

Please contact us if there are any questions about this submittal.

Very truly yours,



J. A. Stall
Vice President
St. Lucie Plant

JAS/GRM

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

NRC Requested Action 1:

Within 180 days of the date of GL 99-02, submit a written response to the NRC describing your current TS requirements for the laboratory testing of charcoal samples for each ESF ventilation system including the specific test protocol, temperature, RH, charcoal bed thickness, total residence time per bed depth, and penetration at which the TS require the test to be performed. If your current TS specifically require laboratory testing of charcoal samples in accordance with the ASTM D3803-1989 protocol at 30 °C [86 °F], and you have been testing in accordance with this standard, then you only need to address this requested action (i.e., no TS amendment or additional testing is required).

FPL Response 1:

For St. Lucie Unit 1, the following are the safety-related ventilation systems with charcoal filters: the shield building ventilation system (SBVS), emergency core cooling system (ECCS) area ventilation system, control room emergency ventilation system (CREVS), and the fuel handling building ventilation system (FHBVS). See Table 2 for the current St. Lucie Unit 1 TS requirements for the laboratory testing of charcoal samples for each ESF ventilation system.

For St. Lucie Unit 2, the following are the safety-related ventilation systems with charcoal filters: the control room emergency air cleanup system (CREACS), the shield building ventilation system (SBVS), and the ECCS area ventilation system. Emergency operation of the fuel handling building ventilation system is interconnected with the SBVS and uses the charcoal filters in the SBVS. As discussed in UFSAR Section 9.4.3.2.4, no credit is taken for the ECCS area filtration and cleanup system in the accident analysis. The current TS do not require charcoal testing of the ECCS area ventilation system filters. See Table 3 for the current St. Lucie Unit 2 TS requirements for the laboratory testing of charcoal samples for each ESF ventilation system.

The assumed accident analysis penetration values for each ESF ventilation system, the GL 99-02 maximum allowable penetration based on a minimum safety factor value of 2, the current TS allowable penetration values and the TS allowable efficiencies are shown in Table 1. The values in the Table 1 were calculated using the following formulas:

$$(Assumed\ Accident\ Analysis\ Penetration) = (100\% - Methyl\ Iodide\ Efficiency\ Credited\ in\ Accident\ Analysis)$$

$$(GL99 - 02\ Allowable\ Penetration) \leq \frac{(Assumed\ Accident\ Analysis\ Penetration)}{(Safety\ Factor = 2)}$$

$$Current\ TS\ Allowable\ Penetration = (100\% - TS\ Allowable\ Efficiency)$$

Table 1 Allowable Values				
ESF Ventilation System	Assumed Accident Analysis Penetration	GL 99-02 Maximum Allowable Penetration with SF = 2	Current TS Maximum Allowable Penetration	Current TS Minimum Allowable Efficiency
Unit 1 SBVS	30%	15%	10%	90%
Unit 1 ECCS Area Ventilation System	30%	15%	10%	90%
Unit 1 CREVS	30%	15%	10%	90%
Unit 1 FHBVS	30%	15%	30%(1)	70%(1)
Unit 2 SBVS	50%	25%	10% 1%(1)	90% 99%(1)
Unit 2 CREACS	1%	0.5%	0.175%	99.825%

Note (1) - requirements specified for elemental iodine not methyl iodide.

Tables 2 and 3 include the specific test protocol, temperature, relative humidity (RH), charcoal bed thickness, total residence time per bed depth, and penetration at which the current TS require the test to be performed for the St. Lucie Units 1 and 2 systems.

NRC Requested Action 2

If you choose to adopt the ASTM D3803-1989 protocol, submit a TS amendment request to require testing to this protocol within 180 days of the date of this generic letter. The request should contain the test temperature, RH, and penetration at which the proposed TS will require the test to be performed and the basis for these values. If the system has a face velocity greater than [110] (August 23, 1999 errata) percent of 0.203 m/s [40 ft/min], then the revised TS should specify the face velocity. Also, indicate when the next laboratory test is scheduled to be performed.

FPL Response 2

FPL plans to submit TS amendment requests to adopt charcoal testing using the ASTM D3803-1989 test protocol by November 30, 1999. The proposed changes will be only for those safety-related ESF systems with charcoal filters that currently have TS requirements to perform laboratory testing for iodine removal. The proposed changes will also retain the current TS surveillance intervals.

The request will contain the test temperature, and RH at which the proposed TS will require the test to be performed. The acceptance criteria will be specified as minimum removal efficiency in lieu of the allowable penetration. The license amendment request will include the basis for these values. The applicable charcoal filter systems at St. Lucie do not have a face velocity greater than 110 percent of 40 fpm. The face velocity is calculated by dividing the flowrate (cfm) by the charcoal adsorber net free area (ft²) in the equipment specification.

For St. Lucie Unit 2, the next charcoal test is scheduled in the spring of 2000. For St. Lucie Unit 1, the next charcoal test is scheduled in the spring of 2001.

NRC Requested Action 3

If you are proposing an alternate test protocol, address the attributes discussed below and submit a TS amendment request to require testing to this alternate protocol within 180 days of the date of this generic letter. The request should contain the test temperature, RH, and penetration at which the proposed TS will require the test to be performed and the basis for these values. If the system has a face velocity greater than [110] percent of 0.203 m/s [40 ft/min], then the revised TS should specify the face velocity. Also, indicate when the next laboratory test is scheduled to be performed....

FPL Response 3

FPL is not proposing an alternate test protocol for use at St. Lucie.

NRC Requested Action 4

At the next required laboratory surveillance test of a charcoal sample that is 60 or more days after the date of this generic letter, test your charcoal samples in accordance with ASTM D3803-1989 or replace all of the charcoal with new charcoal that has been tested in accordance with ASTM D3803-1989. In all cases, the results should meet the acceptance criterion that is derived from applying a safety factor as low as 2 (see the note in Enclosure 2 of the GL) to the charcoal filter efficiency assumed in your design-basis dose analysis and the charcoal samples should continue to be tested in accordance with ASTM D3803-1989, in lieu of the current TS-required laboratory testing, until the TS amendment is approved by the NRC.

FPL Response 4

All charcoal media testing performed after August 2, 1999 will be conducted in accordance with the ASTM D3803-1989 test protocol. Any new charcoal will be procured to ASTM D3803-1989. The charcoal test results will meet acceptance criterion that is derived from applying at least a safety factor of 2 to the charcoal filter efficiency assumed in the design basis dose analysis.

NRC Requested Action 5

Addressees who choose not to do the above actions are requested to notify the NRC in writing of their decision, as soon as a decision is reached but no later than 60 days from the date of this generic letter. The 60 day written response should also discuss (1) addressee plans to pursue a proposed alternative course of action (including the basis for establishing its acceptability), (2) the schedule for submitting that proposal for NRC staff review (that proposal should be submitted to the NRC no later than 180 days from the date of this generic letter), and (3) the basis for continued operability of affected systems and components until such time that the proposed alternative course of action is

St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
L-99-232 Attachment Page 4

approved by the NRC.

FPL Response 5

FPL plans to implement the recommendations of the GL 99-02, therefore no 60 day response was required.

TABLE 2 - ST. LUCIE UNIT 1 SAFETY RELATED FILTER SYSTEMS - CHARCOAL TESTING								
System Description			Existing Test Requirements					
Tech Spec (1)	Safety Related Ventilation System Service (1)	Bed Thickness (5)	Test Protocol (1)	Test Temp (1)	Test Relative Humidity (1)	Residence Time / bed depth (2)	Allowable Penetration (4)	Face Velocity (5)
4.6.6.1	Shield Building Ventilation System	2"	ANSI N510-1975	130 deg C	95% R.H.	0.25 Sec	10% for methyl iodide	40 fpm
4.7.8.1	ECCS Area Ventilation System	2"	ANSI N510-1975	130 deg C	95% R.H.	0.25 Sec	10% for methyl iodide	40 fpm
4.7.7.1	Control Room Emergency Ventilation System	2"	ANSI N510-1975	130 deg C	95% R.H.	0.25 Sec	10% for methyl iodide	40 fpm
4.9.12	Fuel Handling Building Ventilation System	2"	ANSI N510-1975	130 deg C	95% R.H.	0.25 Sec	30% for elemental iodide	40 fpm

1. As specified in Technical Specifications
2. Value per ANSI N509-1980, Paragraph 4.3 "normally 0.25 seconds per 2 inches of thickness"
3. No TS Requirement for testing charcoal
4. Calculated as 100 - filter efficiency
5. Values are based on charcoal adsorber net free area and system air flows from Equipment Specifications FLO-8770.776, FLO-8770.779, FLO-2998.776, FLO-2998.777, and FLO-2998.779

TABLE 3 - ST. LUCIE UNIT 2 SAFETY RELATED FILTER SYSTEMS - CHARCOAL TESTING								
System Description			Existing Test Requirements					
Tech Spec (1)	Safety Related Ventilation System Service (1)	Bed Thickness (5)	Test Protocol (1)	Test Temp (1)	Test Relative Humidity (1)	Residence Time / bed depth (2)	Allowable Penetration (4)	Face Velocity (5)
4.6.6.1	Shield Building Ventilation System	2"	ANSI N510-1980	130 deg C	95% R.H.	0.25 Sec	10% for methyl iodine & 1% for elemental iodine	40 fpm
(3)	ECCS Area Ventilation System	2"	(3)	(3)	(3)	0.25 Sec	(3)	40 fpm
4.7.7	Control Room Emergency Air Cleanup System	4"	ANSI N510-1980	130 deg C	95% R.H.	0.5 Sec	0.175% for methyl iodine	40 fpm

1. As specified in Technical Specifications
2. Value per ANSI N509-1980, Paragraph 4.3 "normally 0.25 seconds per 2 inches of thickness"
3. No TS Requirement for testing charcoal
4. Calculated as 100 - filter efficiency
5. Values are based on charcoal adsorber net free area and system air flows from Equipment Specifications FLO-8770.776, FLO-8770.779, FLO-2998.776, FLO-2998.777, and FLO-2998.779