

# REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 FACIL: 50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250  
 50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251  
 AUTH. NAME: AUTHOR AFFILIATION  
 WILLIAMS, J.W. Florida Power & Light Co.  
 RECIP. NAME: RECIPIENT AFFILIATION  
 EISENHUT, D.G. Division of Licensing

SUBJECT: Forwards list of addl components to be added to pump & valve test program. Implementation date for spent fuel pit cooling pump set for 860101 to allow completion of mods required for testing.

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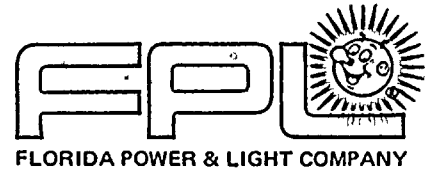
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	NRR/DE/MEB	15	1	1	NRR/DE/MTEB	14	1	1	
	NRR/DL/TAPMG		1	1	REG FILE	04	1	1	
	RGN2		1	1					
EXTERNAL:	ACRS	16	10	10	LPDR	03	1	1	
	NRC PDR	02	1	1	NSIC	05	1	1	
	NTIS		1	1					

THE  
OFFICE OF THE  
ATTORNEY GENERAL  
STATE OF NEW YORK  
ALBANY

IN SENATE,  
JANUARY 10, 1906.

REPORT  
OF THE  
COMMISSIONER OF THE LAND OFFICE  
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October 24, 1984  
L-84-238

Office of Nuclear Reactor Regulation  
Attention: Mr. Darrell G. Eisenhut, Director  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dear Mr. Eisenhut:

Re: Turkey Point Units 3 and 4  
Docket Nos. 50-250 and 50-251  
Revisions to Inservice Test  
Program for Pumps and Valves

Florida Power & Light submitted a revision to the Inservice Test (IST) Program for Pumps and Valves for Turkey Point Units 3 and 4 in letter L-84-84 dated March 30, 1984. The effective date provided in that submittal was corrected in letter L-84-190 dated July 26, 1984.

The purpose of this submittal is to add additional components to the Pump and Valve Test Program. These components include the charging pumps, spent fuel pit cooling pumps, boric acid transfer pumps, and associated valves. Associated with these additions are revisions to Table I, Table IV, and associated relief request basis.

We have set the effective date of implementation for the charging pumps and boric acid transfer pumps as six months from the date of this letter. The implementation date for the spent fuel pit cooling pump has been set at January 1, 1986, to allow for completion of modifications that are required to do the testing.

Should you or your staff have any questions on this information, please contact us.

Very truly yours,

J. W. Williams, Jr.  
Group Vice President  
Nuclear Energy

JWW/PLP/js

Attachment

cc: J. P. O'Reilly, Region II  
Harold F. Reis, Esquire  
PNS-LI-84-321

8410290159 841024  
PDR ADDCK 05000250  
P PDR

1047  
110

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FLORIDA POWER & LIGHT COMPANY  
TABLE IV  
PUMP TEST PROGRAM

PUMP	PUMP NO.	TEST PARAMETERS						
		Speed, H	Inlet Pressure $P_1$	Differential Pressure DELTA P	Flow Rate Q	Vibration Amplitude, V	Bearing Temperature $T_b^{(1)}$	RRB NO.
Auxiliary Feed	P2A	Yes	Yes	Yes	Yes <sup>(3)</sup>	Yes	Yes	---
	P2B	Yes	Yes	Yes	Yes <sup>(3)</sup>	Yes	Yes	---
	P2C	Yes	Yes	Yes	Yes <sup>(3)</sup>	Yes	Yes	---
Intake Cooling Water	*-P9A	No	Yes	Yes	Yes <sup>(3)</sup>	Yes	No	2
	*-P9B	No	Yes	Yes	Yes <sup>(3)</sup>	Yes	No	2
	*-P9C	No	Yes	Yes	Yes <sup>(3)</sup>	Yes	No	2
Residual Heat Removal	*-P210A	No	Yes	Yes	No <sup>(2)</sup>	Yes	No	1&3
	*-P210B	No	Yes	Yes	No <sup>(2)</sup>	Yes	No	1&3
Component Cooling	*-P211A	No	Yes	Yes	Yes <sup>(3)</sup>	Yes	Yes	---
	*-P211B	No	Yes	Yes	Yes <sup>(3)</sup>	Yes	Yes	---
	*-P211C	No	Yes	Yes	Yes <sup>(3)</sup>	Yes	Yes	---
Containment Spray	*-P214A	No	Yes	Yes	No <sup>(2)</sup>	Yes	Yes	1
	*-P214B	No	Yes	Yes	No <sup>(2)</sup>	Yes	Yes	1

FLORIDA POWER & LIGHT COMPANY  
TABLE IV  
PUMP TEST PROGRAM

PUMP	PUMP NO.	TEST PARAMETERS						
		Speed, H	Inlet Pressure P <sub>1</sub>	Differential Pressure DELTA P	Flow Rate Q	Vibration Amplitude, V	Bearing Temperature T <sub>b</sub> (1)	RRB NO.
Charging	*-P201A	Yes	No	Yes	Yes <sup>(3)</sup>	Yes	Yes	5 & 7
	*-P201B	Yes	No	Yes	Yes <sup>(3)</sup>	Yes	Yes	5 & 7
	*-P201C	Yes	No	Yes	Yes <sup>(3)</sup>	Yes	Yes	5 & 7
Spent Fuel Pit Cooling	*-P212A	No	Yes	Yes	---	Yes	Yes	8
	*-P212B	No	Yes	Yes	---	Yes	Yes	8
Diesel Oil Transfer	3-P10	No	No	Yes	No	Yes	Yes	4 & 5
	4-P10	No	No	Yes	No	Yes	Yes	4 & 5
Boric Acid Transfer	3-P203A	No	No	Yes	Yes <sup>(2)</sup>	Yes	No	1,5&6
	3-P203B	No	No	Yes	Yes <sup>(2)</sup>	Yes	No	1,5&6
	4-P203A	No	No	Yes	Yes <sup>(2)</sup>	Yes	No	1,5&6
	4-P203B	No	No	Yes	Yes <sup>(2)</sup>	Yes	No	1,5&6



FLORIDA POWER & LIGHT COMPANY  
TABLE IV  
PUMP TEST PROGRAM

PUMP	PUMP NO.	TEST PARAMETERS						
		Speed, H	Inlet Pressure $P_1$	Differential Pressure DELTA P	Flow Rate Q	Vibration Amplitude, V	Bearing Temperature $T_b$ (1)	RRB NO.
High Head Safety Injection	P215A	No	Yes	Yes	No (2)	Yes	Yes	1
	P215B	No	Yes	Yes	No (2)	Yes	Yes	1
	P215C	No	Yes	Yes	No (2)	Yes	Yes	1
	P215D	No	Yes	Yes	No (2)	Yes	Yes	1

NOTE (1): BEARING TEMPERATURE,  $T_b$ , IS MEASURED ONLY ON THE ANNUAL TEST.

NOTE (2): FIXED HYD. RESISTANCE SYSTEM

NOTE (3): VARIABLE HYD. RESISTANCE SYSTEM.



ATTACHMENT A-2

TURKEY POINT UNIT NO. 3 & 4

RELIEF REQUEST BASIS

RELIEF REQUEST BASIS

## 1) PUMPS:

Boric Acid Transfer Pump No. *A	(*P203A)
Boric Acid Transfer Pump No. *B	(*P203B)
Residual Heat Removal Pump No. *A	(*P210A)
Residual Heat Removal Pump No. *B	(*P210B)
Containment Spray Pump No. *A	(*P214A)
Containment Spray Pump No. *B	(*P214B)
High Head Safety Injection Pump No. A	(P215A)
High Head Safety Injection Pump No. B	(P215B)
High Head Safety Injection Pump No. C	(P215C)
High Head Safety Injection Pump No. D	(P215D)

Test Requirement: IWP-4600 Flow Measurement

Basis for Relief: Section XI, ASME Boiler & Pressure Vessel Code, requires measurement of flow rate using a rate or quantity meter installed in the pump test circuit. These pumps use a fixed hydraulic resistance system with an orifice installed in the pump recirculation line (IWP-1400).

Alternate Testing: Measure differential pressure (IWP-4240) across the pump during the quarterly pump test. The measured differential pressure across the pump shall then be compared to the established reference value. This provides for an indirect measure of flow rate and verifies the operational readiness of the pump (IWP-1500)

RELIEF REQUEST BASIS

2) PUMPS:

Intake Cooling Water Pump No. *A	(*P9A)
Intake Cooling Water Pump No. *B	(*P9B)
Intake Cooling Water Pump No. *C	(*P9C)

Test Requirement: IWP-4310 (Bearing Temperature Measurement)

Basis for Relief: The pump bearings for these vertical centrifugal pumps are located inside the pump housing which is submerged. The bearings are water lubricated with no provisions for temperature measurement.

Alternate Testing: Measurement of vibration amplitude and the other required parameters during each pump test will provide for the detection of changes in the mechanical characteristics of the pump.

3) PUMPS:

Residual Heat Removal Pump No. *A	(*P210A)
Residual Heat Removal Pump No. *B	(*P210B)

Test Requirement: IWP-4310 (Bearing Temperature Measurement)

Basis for Relief: The pump bearings for these vertical centrifugal pumps are located inside the pump housing which is submerged. The bearings are water lubricated with no provisions for temperature measurement.

Alternate Testing: Measurement of vibration amplitude and the other required parameters during each pump test will provide for the detection of changes in the mechanical characteristics of the pump.



RELIEF REQUEST BASIS

4) PUMPS:

Diesel Oil Transfer No. 3	(3-P10)
Diesel Oil Transfer No. 4	(4-P10)

Test Requirement: IWP-4600 Flow Measurement

Basis for Relief: Section XI, ASME Boiler & Pressure Vessel Code, requires measurement of flow rate using a rate or quantity meter installed in the pump test circuit.

Alternate Testing: Flow rate will be calculated, based on the change in Diesel Oil Day Tank level and measured time.

Test Requirement: IWP-4300 Temperature Measurement and IWP-3500 Duration of Tests

Basis for Relief: The Diesel Oil Transfer Pumps have no installed recirculation flow path. The Diesel Oil Day tank level control system provides for a direct flow path from the Diesel Oil Storage Tank to the Day Tank. With automatic pump start on low level in the Diesel Oil Day Tank and automatic pump, stop when the high level setpoint is reached, the typical operating time for these pumps is less than 10 minutes. Therefore, operation of the Diesel Oil Transfer pumps for the 30 minute minimum run time required by IWP-3500 is impractical.

Alternate Testing: The Diesel Oil Transfer Pump bearing temperature will be measured during normal pump tests.

RELIEF REQUEST BASIS

## 5) PUMPS:

Charging Pump No. *A	(*P201A)
Charging Pump No. *B	(*P201B)
Charging Pump No. *C	(*P201C)
 Boric Acid Transfer Pump No. *A	 (*P203A)
Boric Acid Transfer Pump No. *B	(*P203B)
 Diesel Oil Transfer Pump No. 3	 (3-P10)
Diesel Oil Transfer Pump No. 4	(4-P10)

Test Requirement: IWP-4240 Differential Pressure

Basis for Relief: Pump suction pressure taps were not provided in the original design of these systems. Therefore, measurement of pump suction pressure or measurement of differential pressure is impractical.

Alternate Testing: Boric Acid Transfer and Diesel Oil Transfer Pump suction pressure will be calculated, based on Tank level and the fluid elevation above the centerline of the pump.

The charging pumps are positive displacement pumps. Therefore, pump discharge pressure and flow are more representative of pump performance than differential pressure and flow. However, charging pump suction pressure will be calculated, based on Volume Control Tank (VCT) level, VCT pressure, and the fluid elevation above the centerline of the charging pump.



RELIEF REQUEST BASIS

6) PUMPS:

Boric Acid Transfer Pump No. *A	(*P203A)
Boric Acid Transfer Pump No. *B	(*P203B)

Test Requirement: IWP-4310 Bearing Temperature Measurement

Basis for Relief: The Boric Acid Transfer Pumps are completely enclosed with thermal insulation and heat traced to prevent precipitation of boric acid from the solution. Therefore, bearing temperature measurement is impractical.

Alternate Testing: Measurement of vibration amplitude and the other required parameters during each pump test will provide for the detection of changes in the mechanical characteristics of the pumps.



RELIEF REQUEST BASIS

7) PUMPS:

Charging Pump No. *A	(*P201A)
Charging Pump No. *B	(*P201B)
Charging Pump No. *C	(*P201C)

Test Requirement: IWP-3210 Allowable Range of Inservice Test Quantities

Basis for Relief: The nuclear safety related function of the charging pump is to provide for boration of the Reactor Coolant System (RCS) to the required shutdown margin from hot shutdown to the cold, Xenon-free shutdown condition. This safety function can be fulfilled with a charging pump flow of 45 gpm plus flowrates to compensate for both RCP seal leak-off and RCS leakage at a nominal RCS pressure of 2235 psig.

Alternate Testing: Minimum acceptance criteria for charging pump operability shall be 45 gpm plus flowrates to compensate for both RCP seal leak-off and RCS leakage at a nominal RCS pressure of 2235 psig. If this criteria can not be met, the charging pump shall be declared inoperable and not returned to service until the corrective action requirements of Subarticle IWP-3230 (Corrective Action) are met.

RELIEF REQUEST BASIS

8) PUMPS:

Spent Fuel Pit Cooling  
Spent Fuel Pit Cooling

(\*P212A)  
(\*P212B)

Test Requirement: IWP-4500 Flow Measurement

Basis for Relief: The original spent fuel cooling system design does not provide for flow measurement. There are no flow nozzles, flow orifices, or pressure taps for flow measurement. Therefore flow measurement is impractical.

The original spent fuel cooling system design was based on removal and replacement of the spent fuel pit pump when the system function could not be fulfilled. The time period associated with the removal and replacement was within the time the spent fuel cooling system could be out of service.

Alternate Testing: Continue operation of the spent fuel pit cooling system based on original system design. Design, fabricate and install a flow measurement device using either a bypass loop or the normal system flow path. Estimated time of completion would be December 31, 1985.



FLORIDA POWER & LIGHT COMPANY  
TABLE I - TESTS TO CODE OR RELIEF REQUEST

VALVE NUMBER	SIZE	TYPE	ACTU.	CODE CL.	CODE CAT.	ACT/ PAS	NORM. POS.	FAIL- URE MODE	REM. POS. IND.	TEST PER	ISI TESTS	RRB NO.	VALVE COORD	REMARKS
*-298A	2	CHECK	S/A	1	AC	A	NO	--	NO	1 1	EF-3 SLT-1	13	A-20	
*-298B	2	CHECK	S/A	1	AC	A	NO	--	NO	1 1	EF-3 SLT-1	13	A-19	
*-298C	2	CHECK	S/A	1	AC	A	NO	--	NO	1 1	EF-3 SLT-1	13	A-18	
*-312C	3	CHECK	S/A	1	AC	A	NO	--	NO	1 1	EF-3 SLT-1	14	C-17	
*-397A	2	CHECK	S/A	2	C	A	NC	--	NO	2	EF-2	15	A-9	
*-397B	2	CHECK	S/A	2	C	A	NC	--	NO	2	EF-2	15	A-9	
*-397C	2	CHECK	S/A	2	C	A	NC	--	NO	2	EF-2	15	A-7	
*-397D	2	CHECK	S/A	2	C	A	NC	--	NO	2	EF-2	15	A-7	

Turkey Point Plant No. 3 & 4

RELIEF REQUEST BASIS

SYSTEM: Chemical and Volume Control

15. Valve: \*-397A, \*-397B, \*-397C, and \*-387D  
Category: C  
Class: 2

Function: Prevents reverse flow from the boron addition system header to a non-operating boric acid transfer pump.

Test Requirement: IWP-3620

Basis for Relief: Testing either of these valves during plant operation would cause an addition of excess boron to the Reactor Coolant System resulting in a reactor shutdown.

Alternate Testing: These valves will be tested at cold shutdowns.

