

FROM: Florida Power Corporation  
 St. Petersburg, Florida  
 J. T. Rodgers

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LTR. MEMO: REPORT: OTHER:  
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ACTION NECESSARY  CONCURRENCE  DATE ANSWERED:  
 NO ACTION NECESSARY  COMMENT  BY:

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DESCRIP: (Must Be Unclassified)  
 Ltr trans the following:

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Long W/4 cys for ACTION	9-1-70	(2 cys adv F. Karas)	

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ENCLOSURES:  
 AMDT # 10, notarized 8-28-70 consisting of two amended pages (X and XI), Part 3 of SUPPL # 5 (Report of Tests on 1170 Ton Prescon Tendons) and remaining info re our ltr req of 3-13-70.

Regulatory File		D. Thompson	
AEC PDR		DTIE (Laughlin)	
Compliance (2)		NSIC (Buchanan)	
OGC (Rm P 506A)		AEC HQ LIB	J 004
Dube/Wilson		ASLB (Yore "H" St)	
Boyd		Case (Reading File)	
DeYoung			
Howe			

(3 Orig signed & 97 conf'd cys ea rec'd)

REMARKS:

Maccary			
Dromerick (3)			
Minogue			
Moore			
Rosen			fod

Holding (18) cys for ACRS

U.S. ATOMIC ENERGY COMMISSION

MAIL CONTROL FORM FORM AEC-3265 (8-60)

★ U. S. GOVERNMENT PRINTING OFFICE: 1969-364-594

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**FLORIDA POWER CORPORATION**

ST. PETERSBURG FLORIDA



August 28, 1970

The Director  
Division of Reactor Licensing  
United States Atomic Energy Commission  
Washington, D. C. 20545



Dear Sir:

In re: Florida Power Corporation  
Crystal River Nuclear Generating Plant Regulatory File Cy.  
Docket No. 50-302

Enclosed are three (3) executed originals and nineteen (19) conformed copies of Amendment No. 10 consisting of Part III of Supplement No. 5, two insert pages to Supplement No. 5 to the Preliminary Safety Analysis Report, and the remaining information requested in your letter of March 13, 1970. Also enclosed are an additional eighty one (81) copies of each for updating the balance of the copies of the Preliminary Safety Analysis Report filed with the original application.

Amendment No. 10 supplements the Preliminary Safety Analysis Report so as to include the latest design information for your continuing review.

Amendment No. 10 material includes two amended pages (x and xi) and Part III of The Prescon Corporation's presentation on "Tests on 1170 Ton Prescon Tendons". This information completes The Prescon Corporation's report on the tendon system.

In accordance with a request noted in your letter of March 13, 1970, the prestressing system anchorage component "materials description and fabrication process summary" is as follows:



2753 d

Materials Description

The acceptance criteria and the proposed materials for the anchorage components is as follows:

Component	fy (ksi) min.	fu (ksi) min.	NDTT (max)	Location	Material
Bearing Plate	50	90	-15°F	Mat only	ASTM A533 Grade B Class 2
				All others	Modified Armco VNT <sup>1</sup> (Covered by proposed ASTM A633-E single normalized)
Dead End	50	90	-15°F	All	Modified Armco VNT <sup>1</sup> (Covered by proposed ASTM A633-E double normalized)
Shims	50	90	-15°F	All	Modified Armco VNT <sup>1</sup> (Covered by proposed ASTM A633-E) 3" plate single normalized, 4" plate double normalized
Stressing Washer	60	100	-15°F	All	Either Q & T Alloy steel forging, chemistry of ASTM A514 type E - double quenched and tempered or Luken's Q & T Alloy steel plate (Modified ASTM A517, Gr. F) <sup>2</sup>

<sup>1</sup> Chemical composition for modified Armco VNT:

Carbon	0.25% maximum	Nitrogen	0.01% to 0.02%
Manganese	1.30% to 1.65%	Phosphorus	0.035% maximum
Vanadium	0.12% to 0.17%	Sulfur	0.040% maximum
Silicon	0.15% to 0.30%		

<sup>2</sup> Modifications to ASTM A517, Grade F:

Chemistry - Max. N - 1.5%, Max. Mn - 1.3%  
 Gage - 6 inches thick  
 Physical Properties - as above

The above criteria were developed in conjunction with the tendon test program reported in Supplement 5 to the Preliminary Safety Analysis Report.

Fabrication of Anchorage Components

Fabrication Process Summary

1. Bearing Plates:
  - a. Plate is flame-cut to size.
  - b. Central hole is flame-cut.
  - c. Mounting holes are jig-drilled and tapped.
  - d. Trumpet is positioned concentric with central hole and welded using a seal weld.
2. Dead End Plates:
  - a. Plate is flame-cut to size.
  - b. Mounting holes are jig-drilled.
  - c. Wire holes are drilled.
3. Shims:
  - a. Plate is flame-cut to size.
4. Stressing Washers:
  - I. Forging
    - a. Billet is cut and forged.
    - b. Forging is double quenched and tempered.
    - c. The heat treated forging is threaded externally.
    - d. Wire holes are drilled.
    - e. Mounting holes are jig-drilled and tapped.
  - II. Plate
    - a. The double quenched and tempered plate is preheated and the stressing washer cut from plate.
    - b. Stressing washer is stress relieved after flame cutting.

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- c. Stressing washer is threaded externally.
- d. Wire holes are drilled.
- e. Mounting holes are jig-drilled and tapped.

Effects of Fabrication

1. Flame Cutting:

Results of tests and studies by AWS and ASME show that flame cut surfaces of low carbon content (less than 0.25%) and low alloy steels are at least equal in mechanical properties to the uncut metal. (See AWS Handbook, Section 3A of the Sixth Edition).

2. Welding:

The welding procedures and operators were qualified under the AWS recommended practices. The effects of welding upon the mechanical properties are not detrimental due to the low carbon content.

3. Machining (drilling, tapping, threading):

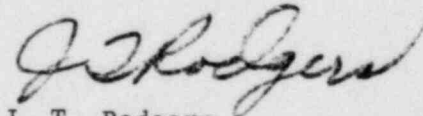
Production type components were tested and reported in Supplement No. 5. No detrimental effects on the machined surfaces were noted.

4. Stress Relieving (Stressing washer cut from plate):

The stressing washer is heated in a furnace to approximately 1150°F and held for sufficient time to reduce the surface hardness for subsequent threading operations.

The prestressing system anchorage component materials listed above meet the criteria as outlined in our letter of March 4, 1970.

Very truly yours,



J. T. Rodgers  
Nuclear Project Manager

JTR/sd