

FLORIDA POWER CORPORATION
POWER ENGINEERING & CONSTRUCTION DEPT.
CRYSTAL RIVER - UNIT 3

APPROVED BY:

Engineer *[Signature]* Date 7-2-71
ORIGINAL SIGNED BY
Mgr. - Power Engr. W. A. SZELISTOWSKI Date 7-2-71
Nuclear Proj. Mgr. J. T. RODGERS Date 7-2-71

1968

SPECIFICATION	
FOR	
FURNISHING AND DELIVERING OF	
STRUCTURAL CONCRETE	
SP-5569	OCTOBER 17, 1968
CRYSTAL RIVER - UNIT NO. 3 FLORIDA POWER CORPORATION	

FPC - 321-A3.2

[Signature] 6-23-71
APPROVED - DEPT. PROJECT ENGR. DATE

[Signature] 6-25-71
ISSUED FOR CRYSTAL RIVER UNIT 3 DATE

QUALITY PROGRAM
REVIEW and DOCUMENTATION
REQUIRED

REVISION:	REVIEW & DOCUMENTATION REQUIRED		DESIGN ENGINEER
	YES	NO	
A			
B			
C			
D		✓	<i>[Signature]</i>

Gilbert Associates, Inc.
525 Lancaster Avenue
Reading, Pennsylvania

S.N.D. - W.A.D.
W.O. 4203-00
Addendum A
October 17, 1968
Addendum B
January 22, 1969
Addendum C
March 13, 1969
Addendum D
June 23, 1971

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ADDENDUM D

Sheet 1 of 1
June 23, 1971SECTION III - DETAILED SPECIFICATIONS3:09 Admixtures

3:09.1 Air Entraining Admixture:

Subitem 1.:

Delete this subitem as written in Addendum B (dated January 22, 1969) in its entirety and replace with the following:

- "1. All structural concrete shall be considered subject to potentially destructive exposure and shall contain entrained air in amounts conforming with the following:

<u>Nominal Maximum Size of Coarse Aggregate</u>	<u>Total Air Content % by Volume</u>
3/4 in	3 - 6
1-1/2 in	3 - 6 "

3:11 Mixing Concrete

3:11.2 Transit Mixing:

Third sentence - Lines 5, 6, and 7: :

Delete this sentence in its entirety and replace with the following:

"The maximum number of revolutions at mixing speed shall be 110; any additional mixing shall be at agitating speed, as required by ASTM C 94-67."

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proportions comply with those for the design mixes with water content modified as required by measurements to be made of content of surface moisture on the aggregates. This inspector will test periodically all mix ingredients and shall insure that a ticket is provided for each batch as specified in Item 3:11.6 of this Specification.

3:11.2 Transit Mixing:

Ready-mixed concrete shall be mixed and transported in accordance with "Ready-Mixed Concrete, Spec. for," ASTM C 94-67. The minimum amount of mixing in truck mixers loaded to maximum capacity shall be 70 revolutions of the drum or blades after all of the ingredients, including water, are in the mixer. The maximum number of revolutions at mixing speed shall be 100; any additional mixing shall be at agitating speed, as required by ASTM C 94-67. All trucks shall be equipped with a revolution counter.

3:11.3 Delivery:

The concrete shall be delivered to the site and discharge shall be completed within 1-1/2 hours or before the drum has been revolved 300 revolutions, whichever comes first, after the introduction of the mixing water to the cement and aggregates, or the introduction of the cement to the aggregates. In hot weather, the 1-1/2 hour time limit shall be reduced, as directed by the TESTING LABORATORY and/or OWNER. Concrete which does not meet this requirement may be rejected at no cost to the OWNER. However, the SUPPLIER will not be responsible for delays at the site which are beyond his control.

3:11.4 Hot Weather Concrete:

1. Except as modified herein, hot weather concrete shall comply with ACI 605. At air temperatures of 90 F or above, special procedures shall be adopted to keep the concrete as cool as possible. The temperature of the concrete when it is unloaded from the trucks shall not exceed 90 F.
2. Concrete for the containment structural walls, dome, and mat shall have a placing temperature of not more than 70 F.

3:11.5 Mixing Water:

The proportion of water in each strength mix shall be adjusted daily as required by the content of surface moisture on the aggregates. Except for this adjustment, no changes in quantity of mixing water shall be made without the approval of the OWNER.

3:11.6 Batch Record:

Each batch of concrete shall be recorded on a ticket which provides the date, actual proportions of the mix, concrete design strength, destination

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as to portion of structure, and identification of transit mixer. The truck driver shall deliver this record to the OWNER with a copy to the TESTING LABORATORY personnel at the location where the concrete is delivered. As required by ASTM C 94-67, the batch ticket shall also include the time loaded, amount of concrete, and reading of revolution counter at first addition of water.

3:12 Quality Control

3:12.1 The OWNER will obtain the services of a TESTING LABORATORY which will perform the functions hereinafter specified:

1. Sample and test cement, when required by the OWNER, to ascertain conformance with ASTM C 150-67, Type II.
2. Test samples of fine and coarse aggregates to ascertain conformance with the following ASTM specifications:
 - a. C 29-67 T "Unit Weight of Aggregate, Test for."
 - b. C 40-66 "Organic Impurities in Sands for Concrete, Test for."
 - c. C 127-59 "Specific Gravity and Absorption of Coarse Aggregate, Test for."
 - d. C 128-59 "Specific Gravity and Absorption of Fine Aggregate, Test for."
 - e. C 136-67 "Sieve or Screen Analysis of Fine and Coarse Aggregates, Test for."
3. Conduct periodic tests to determine surface moisture content of aggregates.
4. During concreting operations, furnish the services of an inspector at the batch plant who will certify the mix proportions and conduct the tests itemized above.
5. Furnish the services of an inspector at the site who will make slump tests, make test cylinders, check air content, and record weather conditions. With OWNER/ENGINEER approval, he will make adjustments in the mix proportions, if necessary, to meet the requirements of this Specification. Finally, he will have the right to reject any concrete which does not meet or cannot be adjusted to meet the requirements of this Specification.
6. Maintain all quality control and test records, which will include certified copies of mill test reports for the cement and batch tickets for each batch of concrete.

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3:12.2 The evaluation of test results will be in accordance with Chapter 17 of ACI 301-66. Sufficient tests will be conducted to provide an evaluation of concrete strength in accordance with this Specification. Whenever it appears that tests of the laboratory cured cylinders fail to meet the requirements set forth in this Specification, the OWNER/ENGINEER shall have the right, at the SUPPLIER'S expense, to order changes to the proportions of the mix to increase the strength.

3:12.3 The SUPPLIER shall reimburse the OWNER for the cost of removing and replacing defective concrete including the costs of forming, form removal, reinforcing steel, embedments, and all other related WORK and materials when and if the defective concrete is the fault of the SUPPLIER.

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