FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT NO. 3
Docket No. 50-302

REQUEST FOR ADDITIONAL INFORMATION FOR FSAR REVIEW

5.1 Discuss the manner in which the specified general shell analyses and finite element analyses recognize and address the cracked state of concrete, and the influence of the prestressing tendon holes on the surrounding concrete for the containment structure

a. Since the analyses did not recognize the cracked state of concrete for determining the discontinuity moments and forces, provide an approximation of the magnitude of the change in internal forces at the sections of reductions in stiffness resulting from cracking. In addition, provide an approximation of the magnitude of internal force changes induced in sections removed from these areas as redistribution of internal forces takes place. Provide assurance that all sections can resist these redistributed forces.

b. Distress in the dome of another prestressed concrete containment led investigators to evaluate the effect of the loss of

gross section resulting from the presence of the tendons. The conclusion as a result of laboratory tests was that for the particular arrangement of tendons the membrane stresses would increase by approximately 33%. Provide information regarding the effect of this magnitude of change on the margins of safety and computed stresses for this facility.

5.4 Describe in detail the procedures used to design the roof structural steel for the auxiliary building so that it cannot damage the Class I portions of the building under the imposed loads.

a. Provide sketches to illustrate the framing concepts of the structural steel.

b. Provide the various loads and loading combinations for the structural steel.

c. Indicate whether the protection afforded to the Class I items from the collapse of the roof structural steel will be provided by limiting the stresses or by controlling and predicting the collapse mechanism(s).

d. Provide a summary of the methods and procedures used to determine member internal forces. Provide an example for one loading case to illustrate the application of the methods and procedures.

e. Provide the method of determing the internal force envelopes for the various members and design procedure used to proportion members.

f. Provide the details of several of the typical joints and connections and the supporting calculations.

5.5 Present additional details regarding the deficient concrete that was noted on page 5-15 of the FSAR. Include the reason for concluding there was a deficiency, how the deficiency was discovered, the program used for correcting the deficiency, and the verfication procedure used to finally assure that the original requirements have not been compromised.

a. Provide the criteria used to evaluate the adequacy of in-place concrete and the methods used to obtain information on the in-place concrete.

b. Recent experiences have indicated significant construction problems relating to steel placement and detailing, and concrete placement in critical areas of the containment. Describe the provisions being made for this facility that will nearly eliminate the occurrence of such proolems.

5.8 For the Cadweld splice test program that was utilized as described on page 5-17, present the following information:

5.8.1 Justify the inclusion of 21 specially selected pilot splice tests samples with 30 production splice test samples as a group to determine whether the sampling frequency can be reduced.

5.8.2 Describe what has been done as a result of the outlined test program and indicate whether sampling frequencies were reduced.

5.8.3 Compare the test program to AEC Safety Guide No. 10, entitled "Mechanical (Cadweld) Splices in Reinforcing Bars of Concrete Containments."

5.8.4 Present the results of the Cadweld testing completed to date.