50302-354

# Safety Evaluation Report

Suppl. No. 4

U. S. Nuclear Regulatory Commission

related to operation of

## Crystal River Nuclear Generating Plant, Unit 3

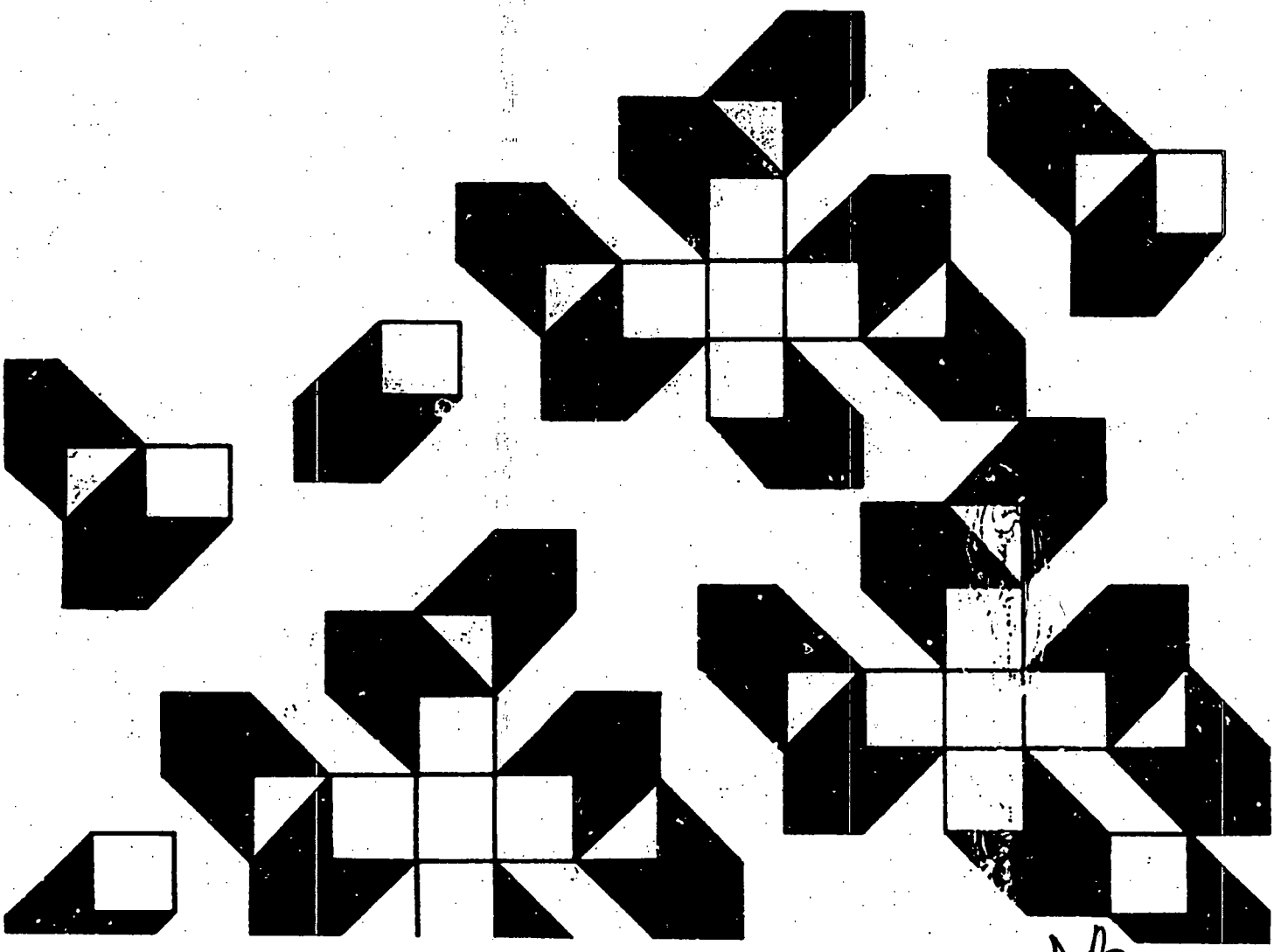
Office of Nuclear Reactor Regulation

Docket No. 50-302

Florida Power Corporation, et al.

January 1977

Supplement No. 4



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## 3.0 DESIGN CRITERIA - STRUCTURES, COMPONENTS, EQUIPMENT AND SYSTEMS

### 3.8 Design of Category I (Seismic) Structures

#### 3.8.1 Containment

We stated in Supplement No. 3 to our Safety Evaluation Report that based on our review to date we concluded that the plant can be operated within the startup mode of operation at power levels less than five percent of rated thermal power without adversely affecting the health and safety of the public. This limitation was placed on plant operation until we completed our review of the structural integrity test of the containment to confirm our conclusion that the repaired structure meets the original design criteria.

We also stated that we would require Florida Power Corporation to propose additional surveillance requirements on the containment in order to provide assurance that the structure will continue to behave as predicted during the life of the plant, and that our principal concern in this regard is the strains that may be introduced as a consequence of temperature differentials across the containment dome. Accordingly, we conditioned the facility operating license in Amendment No. 1 to the license to require that the additional surveillance program be submitted to the Commission within three months of the date of issuance of the license.

As we stated in Supplement No. 2 to our Safety Evaluation Report, we required Florida Power Corporation to make a detailed analysis of the repaired dome and to have it instrumented so that a correlation between the predicted and measured behavior can be established when the containment is subjected to the structural integrity test conducted according to the recommendations of Regulatory Guide 1.18, "Structural Acceptance Test for Concrete Primary Containments."

We have completed our review of the final test report, and have compared the measured dome strains to the predicted values. We have also compared the measured displacements of the dome during the structural test with the predicted displacements.

Comparisons of the measured to the predicted strains and displacements of the containment dome indicate that the structure behaved in an acceptable manner. The structural integrity test therefore confirms our conclusion that the structure meets the original design criteria and will withstand the specified design conditions without impairment of structural integrity or safety function.

Based on the determinations indicated above, we conclude that with regard to the containment structural design, and repair of the containment dome, operation of the facility at full rated power is acceptable.