

Dockets

Docket No. 50-302

OCT 12 1973

Florida Power Corporation  
ATTN: Mr. J. T. Rodgers  
Assistant Vice President  
and Nuclear Project Manager  
P. O. Box 14042  
St. Petersburg, Florida 33733

POOR ORIGINAL

Gentlemen:

On the basis of our continuing review of the Final Safety Analysis Report (FSAR) for Crystal River Nuclear Generating Plant, Unit 3, we find that we need additional information to complete our evaluation. The specific information is listed in Enclosure 1. Enclosure 1 details our position on hurricane protection based upon review of the material supplied by Florida Power Corporation, the U. S. Army Coastal Engineering Research Center (CERC), and National Oceanic and Atmospheric Administration (NOAA), and a detailed independent review and analyses by both the staff and our consultants.

In summary, we have found your consultant's, Dames & Moore, hurricane surge model generally acceptable, but the rationale for the selection of the primary model calibration coefficients (wind stress and bottom friction) is questionable for use in design basis event evaluations because of a general lack of sufficient, high quality verification data. We will, therefore, require that the all safety-related structures and equipment required for safe shutdown of the plant be designed to withstand a probable maximum hurricane (PMH) surge that produces a still water level of 33.4 feet above mean low water level (MLW), and an associated ramp up to elevation 39 feet above MLW. The basis for our selection of still water level and our evaluation of your hurricane studies is provided in Enclosure 2.

It is also our understanding that you are considering a design change in hurricane protection for the berm fronting the plant. Therefore, provide the details of any hurricane protection changes to the staff for review and approval prior to implementation.

Because of the potentially significant effect of these items on our licensing review schedule, we will need a completely adequate response by November 23, 1973. Please inform us within seven days after receipt of

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this letter of your confirmation of the schedule or the date you will be able to meet. If you cannot meet our specified date or if your reply is not fully responsive to our request, it is highly likely that the overall schedule for completing the licensing review for the project will have to be extended. Since reassignment of the staff's efforts will require completion of the new assignment prior to returning to this project, the extent of the extension will most likely be greater than the delay in your response. Please contact us if you have any questions regarding the information requested.

Sincerely,

Original Signed by  
 Albert Schwencer  
 A. Schwencer, Chief  
 Pressurized Water Reactors Branch 4  
 Directorate of Licensing

Enclosures:

1. Regulatory Positions
2. Hydrologic Engineering Summary & Evaluation of the Hurricane Verification Studies & Design Basis Hurricane

cc: S. A. Brandimore  
 Vice President and  
 General Counsel  
 P. O. Box 14042  
 St. Petersburg, Florida 33733

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  - RFedesco
  - HDenton
  - PWR BCs
  - RWKlecker
  - OGC
  - RO (3)
  - BBuckley
  - EGoulbourne
  - LShao
  - CLong
  - ACRS (16)

POOR ORIGINAL

OFFICE ▶	x7548/L:PWR-4	L:SEB	L:APGSB	LFC/PWR-4	
SURNAME ▶	<i>BB</i> BBuckley:cjr	<i>LS</i> LShao	<i>CL</i> CLong	<i>AS</i> ASchwencer	
DATE ▶	10/11/73	10/11/73	10/11/73	10/11/73	

REGULATORY POSITIONS  
CRYSTAL RIVER NUCLEAR STATION  
DOCKET NO. 50-302

It is our position that the hurricane design basis water level for your plant should be elevation 33.4 feet above mean low water (MLW). This position is based upon a detailed comparison of the ability of your consultant's (Dames and Moore) model and the U. S. Army Coastal Engineering Research Center's (CERC) model to reproduce historical hurricane surges and hypothetical storm surges for which analytical solutions are available. The numerical procedures of both models were verified by comparing results to the analytical solutions. Verification of historical hurricane surges by either model was highly dependent upon the proper selection of values for the wind stress model calibration coefficient. The comparison indicates the use of either model is generally acceptable for probable maximum hurricane (PMH) surge estimates; however, the selection of specific calibration coefficients (wind stress, bottom friction, and initial rise) derived from limited verification studies does not support your design basis surge level with any higher degree of confidence than coefficients derived from similar studies with the CERC model. Therefore, there is no assurance that your estimate is conservative and it is our position that the PMH estimate determined from the CERC model should be used as the hurricane design basis water level.

ENCLOSURE 1

The design bases for protection you have proposed in section 9.3.2 of enclosure 2 (the Gilbert Associates, Inc. Report No. 1807) to your letter of July 13, 1973, are adequate<sup>1</sup> for a flood level of 33.4 ft. MLW, with one exception. The exception is the concrete barrier wall around the west and north sides of the turbine room wall. If there is any safety-related equipment necessary to maintain shutdown during a PMH situation<sup>2</sup> that can be adversely effected through the turbine building, then it is our position that protection of that facility is required for water, wind, pressure, and missile effects. Based on the foregoing, provide a summary of your intended hurricane design bases, and if protection of the turbine building is required for maintenance of shutdown, provide your analyses of the water, wind, pressure, and missile effects on that facility. If no safety-related equipment is required to achieve and maintain shutdown that can be affected through the turbine building, then your proposed turbine building protection is not required.

<sup>1</sup>Barriers and water-tight doors on the south and west sides of safety-related structures to elevation 127, and to elevation 124 on the east side. Emergency action to fill the neutralizer tank, condensate storage tank, and fire water storage tanks before high water. The above elevations are to be raised to 129.

<sup>2</sup>See position 2 of Regulatory Guide 1.59.