



NRC PDR

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

June 11, 1979

Docket No. 50-309

Mr. W. P. Stewart
Director, Power Production
Florida Power Corporation
P. O. Box 14042, Mail Stop C-4
St. Petersburg, Florida 33733

Dear Mr. Stewart:

We have reviewed your submittal of July 25, 1977 regarding degraded grid voltage and have determined that the additional information identified in the enclosure is necessary to continue our review. Please respond within 60 days from the date of this letter.

Sincerely,

A handwritten signature in cursive script, reading "Robert W. Reid".

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosure:
Request for Additional
Information

cc w/enclosure: See next page

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Florida Power Corporation

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

Mr. Robert B. Borsum
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Nuclear Power Generation Division
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Crystal River Public Library
Crystal River, Florida 32629

Mr. Jack Shreve
Office of the Public Counsel
Room 4, Holland Building
Tallahassee, Florida 32304

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REQUEST FOR ADDITIONAL INFORMATION
CRYSTAL RIVER UNIT NO. 3
DEGRADED GRID VOLTAGE
(TAC 10017)

Based upon a review of your submittal of July 21, 1977, we conclude that the use of existing undervoltage relaying to protect against a sustained degraded grid condition is not acceptable.

1. In attachment 1 of Mr. Stolz's letter of June 6, 1977 it is stated that a second level of undervoltage protection is required. The setpoints of this second level of undervoltage protection must protect the safety related equipment, including but not limited to, the motors, busses, contactors, and control circuits from a sustained low voltage condition. The undervoltage protection must assure that a voltage below that needed to start and accelerate motors, pull in contactors, or blow control circuit fuses is not present on the bus when this equipment is called upon. Provide your response to the above position.
2. Your proposed setpoint, 2375V for the 4160V bus, is far below the voltage required to start and accelerate safety related motors, close in contactors, and could possibly blow control circuit fuses. A second set of undervoltage relays, in addition to the loss-of-voltage relays, are required to sense the degraded condition. It should be noted that these relays must meet the requirements of IEEE 279-1971 including that they be seismically qualified, Class IE qualified, and documented as such. Provide your response to the above position.
3. The chosen voltage setpoint and time delay associated with second level undervoltage protection must assure that the safety related equipment is not subjected to a voltage below that recommended by the manufacturer for a period of time long enough to cause permanent damage. Provide your response to the above position.
4. Please furnish with your proposal any analysis or calculations to substantiate your choice. This may include voltage profiles of safety busses in the minimum and maximum loaded conditions, motor heat curves, contactor drop-out and pull-in voltages, control circuit fuse characteristics, logic diagrams to show your choice of coincident logic, or schematics of relaying circuits. Refer to Mr. Stolz's letter of June 6, 1977 and attachments for full criteria.
5. Accordingly, your submittal for Technical Specification Change No. 6 is not in compliance with our position as stated in Mr. Stolz's letter, namely the proposed setpoints and limits for undervoltage protection. Provide revised proposed technical specification changes.

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