

FLORIDA POWER CORPORATION

CRYSTAL RIVER-UNIT 3  
DOCKET NUMBER 50-302

SAFETY EVALUATION REPORT

7.0 INSTRUMENTATION AND CONTROLS

7.1 General

The Commission's General Design Criteria (GDC), IEEE Standards including IEEE Criteria for Protection Systems for Nuclear Power Generating Stations (IEEE Std 279-1968), and applicable Regulatory Guides for Power Reactors have been utilized as the bases for evaluating the adequacy of the protection and control systems. Specific documents employed in the review are listed in the Appendix to this report.

The results of our review of the logic and electrical schematics and site visit are reflected in this evaluation.

7.2 Reactor Protection System (RPS)

The RPS is essentially the same as that for the Arkansas Nuclear One, Unit 1 except for the absence of the Power/Reactor Coolant (RC) pump trip function. The applicant had identified this trip as a surveillance reactor trip function and had indicated that because no credit is taken for this function in the safety analysis, this trip did not have to satisfy IEEE Std 279-1968 requirements. We have advised the applicant that the introduction of this "second class" of trip in the RPS should not in any way result in the degradation of any reactor trips. Therefore, we will require that the Power/RC pump trip be designed to satisfy IEEE Std 279-1968 requirements without exception. The applicant has elected to remove this trip from the RPS instead of designing it to comply with IEEE Std 279-1968. We have informed the applicant that the need of this trip to protect the reactor has not yet been evaluated by the Regulatory staff. If it is determined that the Power/RC pump trip is required for the reactor protection, we will require that this trip be retained and upgraded to comply with IEEE Std 279-1968.

We have reviewed all design aspects of the RPS, including logic schematics, testing capabilities and control of bypasses, and concluded that this system is acceptable, conditioned on the satisfactory resolution of the aforementioned item.

7.3 Engineered Safety Feature (ESF) Systems

The ESF actuation system is essentially the same as that for the Three Mile Island, Unit 1. Our review encompassed all aspects of

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