



# Florida Power

CORPORATION  
Crystal River Unit 3  
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August 30, 1996  
3F0896-30

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D. C. 20555-0001

Subject: FPC to NRC letter, 3F0596-13, dated May 13, 1996

Reference: Licensee Event Report 50-302/96-05-01  
FPC to NRC letter 3F0596-03, dated May 1, 1996

Dear Sir:

The purpose of this letter is to provide a clarification to the subject letter in which Florida Power Corporation (FPC) responded to a Notification of Violation 50-302/96-01-06 concerning Nuclear Services Closed Cycle Cooling Water (SW) flow limits. As part of our corrective actions to avoid further violations, we stated that other similar scenarios for systems that provide cooling flow to safety related components will be reviewed. We further stated that this review would be completed by August 30, 1996.

The referenced letter provided a supplemental Licensee Event Report (LER) on the same issue. In the actions to prevent recurrence, LER 96-05-01 also stated, in part, that other similar scenarios for systems that provide cooling flow to safety related components will be reviewed. However, the LER more correctly stated that the criteria, schedule and resources required to perform this review would be established by August 30, 1996. This action was completed on August 26, 1996.

Accordingly, please find attached a revised response which includes the schedule dates for the above noted review.

Sincerely,

*G. L. Boldt*

G. L. Boldt  
Vice President  
Nuclear Production

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cc: Regional Administrator, Region II  
NRR Project Manager  
Senior Resident Inspector

FLORIDA POWER CORPORATION  
NRC INSPECTION REPORT NO. 50-302/96-01  
REPLY TO A NOTICE OF VIOLATION

VIOLATION 50-302/96-01-06

10 CFR 50, Appendix B, Criterion III, requires that measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. This is applicable to all activities affecting the safety related functions of those structures, systems, and components that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public.

Contrary to the above, on January 30, 1996, the licensee determined that a Loss Of Coolant Accident (LOCA) with a Loss of Offsite Power (LOOP) and the loss of one (either) dc power train could result in the opening of Nuclear Services Closed Cycle Cooling Water (SW) system isolation valves to all three Reactor Building coolers. However, the design basis states that the emergency heat transfer rate of the nuclear services closed cycle cooling system is based on removing the design heat load from each component to be cooled during emergency operations with 2 reactor building fan coolers in service (worst case heat rejection to the nuclear services closed cycle cooling system).

ADMISSION OR DENIAL OF THE ALLEGED VIOLATION

Florida Power Corporation (FPC) accepts the violation.

REASON FOR THE VIOLATION

The reason for this violation is human error due to failure by design personnel to recognize the disconnect between the modification and the design basis. An inadequate failure modes and effects analysis was applied to a modification installed in 1994 to change SWV-41, 43, and 45 circuitry to provide cooling water flow to 2 out of the 3 Reactor Building Cooling Units (RBCU). Prior to installation of this modification, all 3 RBCUs received cooling flow during ES conditions. The design engineers for the modification concentrated on the control circuitry for eliminating cooling flow to the non-operating fan and also ensured the fail-safe position for the valves would be "open" for loss of dc power, thereby ensuring cooling water would be available to an operating fan if the valves were to lose dc power. The design engineers did not consider the consequences of additional SW flow resulting from loss of dc and also, additional Emergency Diesel Generator (EDG) loading resulting from this additional flow.

CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

1. The Shift Supervisor on Duty (SSOD) immediately isolated one of the RBCUs (AHF-1B) with manual valves not susceptible to the above failure mode, thereby restoring SW to OPERABLE status.

2. Operating Procedure OP-417 "CONTAINMENT OPERATING PROCEDURE", OP-408 "NUCLEAR SERVICES COOLING SYSTEM" and SP-381 "LOCKED/SEALED VALVE CHECK LIST (POSITION VERIFICATION OF LOCKED/SEALED VALVES)" were revised effective March 27, 1996 to ensure the SW flow assumptions are maintained by closing the SW valves on the idle non-ES selected RBCU.

**CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS**

1. CR-3's licensing basis for single failure design applicable to the SW system states that a single active failure within an Engineered Safety Feature (ESF) support system must not disable the ESF system from accomplishing its design basis safety function. To ensure there are no additional examples of this condition, other similar scenarios for systems that provide cooling flow to safety related equipment will be reviewed. The focus of this review will be loss of power to a given safety related valve wherein the loss of power can cause system flow and EDG loading to increase beyond analyzed limits. The review is scheduled to begin September 30, 1996 and be completed by June 15, 1997.
2. This design/personnel error was the subject of discussion between the Manager, Nuclear Engineering Design (NED) and the Design Engineering Review Board (DERB) to heighten awareness of the members for future design reviews. A summary of this discussion was distributed to all design personnel within NED as a "lessons learned" with special emphasis on conducting a thorough failure modes and effects analysis.

**DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED**

The immediate actions taken by the SSOD to select AHF-1C as the "B" ES fan while isolating AHF-1B with manual valves, restored the SW system and EDG "A" loading to within their respective design limits and to fully OPERABLE status.