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F. L. CLAYTON, JR.
Senior Vice President



June 9, 1980

Docket No. 50-348
No. 50-364

Mr. James P. O'Reilly
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Suite 3100
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

In response to IE Bulletin No. 80-12, "Decay Heat Removal System Operability," dated May 9, 1980, Alabama Power Company submits the following response for Units 1 and 2 of Farley Nuclear Plant.

Item 1

Describe changes to procedures made or initiated as a result of reviews and analyses, including the scheduled or actual dates of accomplishment, considering limiting maintenance activities to assume redundancy or diversity and integrity of RHR capability.

Response

Redundancy may be provided by having two RHR trains operable. Diversity may be provided in Modes 1 through 5 by having operable steam generators or in Modes 5 and 6 by having an operable charging pump capable of providing borated water to the RCS from the RWST or make-up system for a feed and bleed type operation. Diversity may also be provided in Mode 5 by utilizing either the pressurizer PORV's or RHR suction relief valves to "bleed" the RCS, or in Mode 6 for make-up to the reactor vessel and refueling canal.

The current FNP technical specifications and plant operating procedures adequately address the "redundancy and diversity" concerns expressed in the above referenced bulletin for Modes 1, 2, 3, 4, and 6. In Modes 1, 2, and 3, both redundancy and

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diversity are assured by complying with Technical Specification 3.5.2 which requires two operable independent ECCS subsystems (each consisting of a charging pump, RHR pump and heat exchanger and a flow path for taking suction from the RWST) and Technical Specification 3.4.5 which requires three operable steam generators. In Mode 4, diversity is assured by complying with Technical Specification 3.4.5 (for steam generators) and Technical Specification 3.5.3 which requires at least one operable ECCS subsystem. Diversity is assured in Mode 6 by complying with Technical Specification 3.9.8 which requires at least one operable RHR train and Technical Specification 3.1.2.1 which requires one operable boron injection flow path (consisting of one charging pump and a flow path from either the RWST or the boric acid tanks to the RCS).

In Mode 5, compliance with Technical Specification 3.1.2.1 (boron injection flow path) and Technical Specification 3.4.9.3, which requires in part that two RHR relief valves or a RCS vent ≥ 2.85 square inches be operable, ensures an alternate means of residual heat removal. Technical specifications do not allow redundant boron injection paths (a maximum of one charging pump may be operable whenever RCS cold leg temperature is $< 180^{\circ}$ F. due to overpressurization considerations) and do not require an operable RHR train. Therefore, to ensure diversity in Mode 5, Unit Operating Procedure FNP-1-UOP-2.2, entitled "Shutdown Of Unit From Hot Standby To Cold Shutdown," will be revised by June 30, 1980, to ensure that at least one train of RHR is operable.

Expediting restoration of "out of service" equipment is presently governed by Technical Specification action statement requirements which limit "out of service" time.

Item 2

Describe procedural changes made or initiated as a result of reviews and analysis, including the scheduled or actual dates of accomplishment, considering bypassing or disabling, where applicable, automatic actuation of ECCS recirculation in addition to disabling High Pressure Injection and Containment Spray Preparatory to the cold shutdown or refueling mode.

Response

Unit Operating Procedure FNP-1-UOP-2.2 (Shutdown Of Unit From Hot Standby To Cold Shutdown) will be revised by June 30, 1980 to require the performance of Instrumentation Maintenance Procedure FNP-1-IMP-0.7 entitled "Modes 5 and 6 Surveillance Test Performance," which provides for the above bypass or disabling requirements, except in those cases where the above

systems are required to be operable for mode changes or required tests. These procedural changes will be made for appropriate Unit 2 procedures prior to the issuance of an Operating License.

Item 3

Describe the safeguards at your facility against RHR degradation, including your assessment of their adequacy.

Response

The system is provided with two residual heat removal pumps and two residual heat exchangers arranged in separate independent flow paths. If one of two pumps or heat exchangers is not operable, safe cooldown of the plant is not compromised; however, the time required for cooldown is extended.

The two separate flow paths provide redundant capability of meeting the safeguard function of the Residual Heat Removal System. The loss of one Residual Heat Removal System flow path would not negate the capability of the Emergency Core Cooling System since the two flow paths provide full redundancy for safeguard requirements.

To ensure reliability, the two residual heat removal pumps are connected to two separate electrical buses so that each pump receives power from a different source. If a total loss of offsite power occurs while the system is in service, each bus is automatically transferred to a separate emergency diesel power supply. A prolonged loss of offsite power would not adversely affect the operation of the Residual Heat Removal System.

In addition, FNP has the following safeguards against RHR degradation:

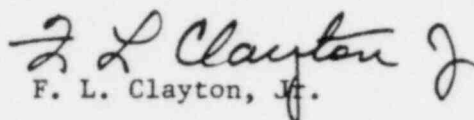
- A. Safeguard channels are fully independent, i.e. failure of one train will not affect output status of the other train.
- B. Safeguard channels are serviced by separate inverters and trains are aligned to separate vital buses.
- C. RHR suction valves from the containment sump will not automatically open unless a S.I. signal in conjunction with a RWST low low level signal is received. A loss of power will not cause spurious opening of the suction valves.
- D. RHR loop suction valve auto-closure logic at FNP is designed so that a RCS wide range pressure transmitter failure (high) will isolate only one train of RHR.

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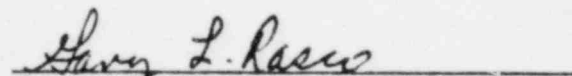
It is felt that the above design features and the procedural changes that are discussed in Item 1 and Item 2 satisfactorily address the concerns expressed in IE Bulletin 80-12.

If there are any further questions, please advise.

Yours very truly,


F. L. Clayton, Jr.

SWORN TO AND SUBSCRIBED BEFORE
ME THIS 9th DAY OF JUNE, 1980.


Notary Public
My commission expires 2-15-82

RWS:de

cc: Mr. R. A. Thomas
Mr. G. F. Trowbridge