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Alabama Power

the southern electric system

August 7, 1981

Docket No. 50-348

Docket No. 50-364

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: ✓ Mr. S. A. Varga
Mr. B. J. Youngblood

Gentlemen:

EXTENSION OF PREVIOUS GRANTED
TEMPORARY CHANGE TO OPERATING LICENSE
N.O. NPF-2 AND NPF-8 TECHNICAL SPECIFICATIONS

In our letter of July 31, 1981, Alabama Power Company requested a one-time extension to a L.C.O. in the Technical Specifications for Units 1 and 2. This request sought an extension of the 72-hour requirement to nine days in order to return an inoperable diesel (1C) to service. The nine-day period was based on partial disassembly and initial evaluation of the damage to 1C diesel generator. As stated in our letter, the extent of the damage was believed to be confined to: (1) water entering four cylinders, via the air intake system, due to a failure of the water jacket O-ring in the number 11 cylinder, (2) scoring of the number 11 cylinder liner and upper piston due to failure of the wrist pin and bushing.

Subsequent to our July 31, 1981 letter, more extensive damage was found. Specifically, four additional upper pistons had suffered wrist pin damage; the vertical drive assembly was damaged due to attempting to start the opposed piston engine with water in the combustion chamber; another cylinder liner failed a water jacket hydrostatic test; and the lower crankshaft thrust bearing had failed.

Based on the final damage evaluation, Alabama Power Company elected to replace all cylinder liner except number 10; replace all upper piston rings; replace all upper bushings and wrist pins; replace number 11 upper/lower piston assembly; perform major repairs of the vertical drive assembly; and replace the lower crankshaft thrust bearing. The magnitude of the final repair, which constitutes a near complete overhaul of the engine, is significantly greater than that originally estimated when the extension was requested and granted.

Alabama Power Company, in conjunction with Colt, has developed the detailed run-in test and inspection program (Attachment 1) as part of our program of returning the diesel to service. This program, as a minimum,

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will require twenty-seven hours. In addition, the vendor representative may likely extend test run times and/or require additional inspections. The length of the inspection time has been increased due to increased scope of the repair.

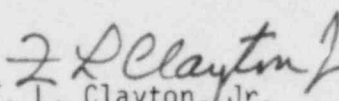
It should be emphasized that the repair effort has been continuing on a 24-hour per day basis with constant onsite support from Colt since diesel IC was declared inoperable. The completion of repairs will extend past 12:50 A.M. on August 8, 1981, the extension deadline. This completion has been significantly delayed due to the increased scope of the repair (e.g., problems with obtaining proper clearances on the lower thrust bearing) and problems with obtaining parts due to recent flight interruptions.

Alabama Power Company, therefore, by this letter, requests a further extension of the L.C.O. from a total of nine days to 15 days. It is the judgment of Alabama Power Company, as outlined in Attachment 2, that the reliability of the offsite and onsite AC power sources, under all conditions, is sufficient to allow this extension with no adverse affects to the safe operation of Farley Units 1 and 2.

Approval of this extension is requested by 5:00 P.M. on August 7, 1981, in order that the generation of Unit 1 and Unit 2 not be impacted.

If you have any questions, please advise.

Yours very truly,


F. L. Clayton, Jr.

FLCJr:RLG:aw

Attachments

cc: Mr. J. P. O'Reilly
Mr. R. A. Thomas
Mr. G. F. Trowbridge
Mr. E. A. Reeves
Mr. L. L. Kintner
Mr. W. H. Bradford
Mr. J. O. Thoma

ATTACHMENT I

RUN IN PROCEDURE FAIRBANKS MORSE DIESEL GENERATOR SET UNIT 1C 38TD8-1/8 OP AFTER AUGUST, 1981 REPAIR

<u>MINIMUM** TEST TIME</u>	<u>PERCENT LOAD</u>	<u>RPM</u>	<u>INSPECTIONS/COMMENTS</u>
5 Min.	0	375	*Bearing check upper and lower crankcase
10 Min.	0	500	Coolant temperature to be not less than 120°F
15 Min.	0	650	*Bearing check upper and lower crankcase
30 Min.	0	800	*Thrust bearing check
30 Min.	0	900	*Thrust bearing check
30 Min.	9	900	*Bearing check upper and lower crankcase and vertical drive gears
1 Hour	23	900	--
1 Hour	34	900	--
1 Hour	45	900	--
1 Hour	57	900	--
1 Hour	68	900	--
1 Hour	80	900	*Bearing check, upper and lower crankcase check
1 Hour	90	900	--
1 Hour	100	900	*Bearing check, upper and lower crankcase
1 Hour	90	900	--
3 Hour	100	900	*Bearing check, upper and lower crankcase, inspect upper piston and rings and vertical drive gears

* Engine required to be shutdown

** Times maybe extended at the discretion of the Vendor
Representative

ATTACHMENT I (cont'd)

This series of tests is the minimum run in recommended by the vendor for an engine after major repair. The vendor representative may require additional test run times and/or supplemental inspections prior to proceeding to the subsequent test. The time allotted in the test sequence for engine shutdown, tag out, inspection and restoration for startup is one and a quarter hours per inspection.

After satisfactory completion of this series of tests, Alabama Power Company will perform the surveillance test required by Section 4.8.1.1.2.a of Units 1 and 2 technical specifications. The time allotted for this test is three hours. At the completion of this test an inspection will be performed of the lower thrust bearing. The total minimum time from the initiation of the test sequence to declaring the diesel operable would be about 27 hours. After completion of this test sequence, the engine will be run loaded for a specified period of time which will be prescribed by the vendor. At the completion of this run the engine will be run at 110% load for one hour. For subsequent surveillance tests required by technical specifications during the next 100 hours of engine operation, the duration of run time should be extended from one hour to four hours.

NOTES:

1. New bearing applications shall be made with F.M. seating compound.
2. A minimum of (4) barrels of used oil designated for the 38TD8-1/8 engine shall be used.
3. Data shall be recorded every 30 minute interval on tests of one hour or longer utilizing the revised log sheets (July, 1981 revision).
4. The hydraulic governing control system shall be utilized during the run in and load tests shall be controlled against the load stop. This precaution should always be taken to prevent overload when wearing in new engine parts.

Attachment 2

Basis of Request For Extension to Previously Granted Temporary Change for FNP Technical Specifications

As shown in Table 1 of the July 31, 1981 request for an extension to the L.C.O., diesel 1C is not required for any accident scenario except LOSP on both units. The 1C diesel in all other cases only powers the redundant river water loads for the A train. Farley Nuclear Plant has a closed service water cooling system which would negate the need for river water and therefore the need for emergency power from the 1C diesel. For the accident scenario of LOSP on both units the 1C diesel would be required for Train A ESF buses on one unit. In each case; however, the B train ESF buses are unaffected by the failure of diesel 1C and would be available. In all of the above failure analyses the B train is totally capable of powering all loads on both units with no dependence on A train power sources.

The likelihood of total LOSP for both units is extremely remote. There are three-230 KV lines and two-500 KV lines feeding the Farley Nuclear Plant from various locations in Alabama and Georgia. These lines feed separate switchyards which are interconnected such that one offsite power line is capable of supplying all emergency AC power for both units. At no time in the history of the Farley Nuclear Plant, has all five operating lines been out of service. During the period of this L.C.O., none of the five lines will be taken out of service unless emergency conditions dictate. In addition, unit startup transformers A and B serve each Farley unit. No single failure will remove both transformers. Each transformer is capable of and is designed to supply both trains of emergency power assuming the failure of one transformer. The above description substantiates the ascertainment concerning LOSP to both units.

The reliability of the operable onsite diesels is considered to be high. As discussed in our July 31, 1981 extension letter, the rate of successful tests of these diesels, since May, 1981, has been significantly increased due to recent efforts made by Alabama Power Company. Since the L.C.O. period began on July 30, 1981, no test failure has been experienced during the staggered surveillance tests being performed on these engines. It should be noted that as soon as diesel 1C is repaired and is in the test program, if an emergency situation arose requiring the operation of the diesel, it would be utilized.

Based on the above discussion, it is the judgment of Alabama Power Company, that there will be no adverse affects of the safe operation of Farley Units 1 and 2 during the requested extension period due to the high reliability of the offsite and onsite AC emergency power sources.