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F. L. CLAYTON, JR.
Senior Vice President

Alabama Power
the southern electric system

October 10, 1979

Mr..A. Schwencer, Director
Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Schwencer:

RE: Changes to Operating License
No. NPF-2 Technical Specifications

Alabama Power Company proposes the attached change to Joseph M. Farley Nuclear Plant Operating License No. NPF-2 Technical Specification involving the following item:

Technical Specification Tables 3.3-3, 3.3-4, 3.3-5, 4.3-2 and paragraph 4.8.1.1.2 concerning degraded electrical power grid conditions.

The Plant Operation Review Committee and the Nuclear Operation Review Board have reviewed the above proposed change and have determined that the change does not involve an unreviewed safety question as shown in the attached safety evaluation.

The class of this proposed amendment is designated according to 10CFR170 requirements. This change is deemed not to involve a significant hazard consideration, which is considered as a Class III change according to 10CFR Part 170. A check for $4,000 is enclosed to cover the fees required.

In accordance with 10CFR50.30(c)(1)(i), three (3) signed originals and thirty-seven (37) additional copies of this proposed amendment are enclosed.

If you have any questions, please advise.

Yours very truly,

F. L. Clayton

F. L. Clayton, Jr.

FLCJr/TNE:bhj

Enclosures

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

SWORN TO AND SUBSCRIBED BEFORE ME THIS 10th DAY OF October, 1979.

NOTARY PUBLIC

My Commission Expires: 5-22-82

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A015
3/3
ADD: BRINKMAN
w/CHECK 4,000.00

SAFETY EVALUATION FOR
CHANGES TO TECHNICAL SPECIFICATION
TABLES 3.3-3, 3.3-4, 3.3-5, 4.3-2 AND PARA. 4.8.1.1.2

Background:

The Farley Technical Specifications do not contain all the currently required NRC test specifications to demonstrate the capability of the onsite power system to perform its intended function. Additional test specifications are needed for (1) the undervoltage relays which provide voltage protection for the loss of voltage condition of offsite power, (2) the undervoltage relays which will be installed to provide voltage protection for the degraded voltage condition of offsite power, and (3) onsite power testing of the diesel generators.

References:

(1) Alabama Power Company letter dated November 7, 1977 to the Nuclear Regulatory Commission (NRC).

(2) NRC Staff positions contained in NRC letter to Alabama Power Company dated November 27, 1978.

(3) Alabama Power Company letter dated January 15, 1979 to the NRC.

Bases:

The following provides the bases for the technical specification changes by tables and paragraph numbers:

Technical Specification Table 3.3-3

Item 7: In accordance with NRC Staff Position 1.f., this item should be added to provide limiting conditions for operation of the undervoltage relays for the loss of voltage condition and degraded voltage condition.

Technical Specification Table 3.3-4

Item 7a: In accordance with NRC Staff Position 1.f., this item should be added to provide a trip setpoint and allowable value for the undervoltage relays which provide protection for the loss of voltage condition. These relays will have a tap setting of 93V. Since the potential transformers associated with safety-related buses 1F and 1G have a turns ratio of 35:1, the resulting trip value and setpoint will be 3255V, or 78.24% of nominal bus voltage [(93V x 35)/4160]. The allowable value was determined to be 3222V, or 77.45% of nominal bus voltage. This value is sufficiently above the safety limit of 68% to accommodate inaccuracies associated with the relays.

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The manufacturer's published undervoltage relay time curves shall be used as a basis for acceptance to verify the relay time delays are within 5% of that specified for tap value voltages. The 5% allowance is provided to accommodate the inaccuracy associated with the time delay of the relays. This inaccuracy is insignificant due to the fast response of the undervoltage relays.

Item 7b: In accordance with NRC Staff Position 1.f., this item should be added to provide a trip setpoint and allowable value for the undervoltage relays which provide protection for the degraded voltage condition. These relays will have a tap setting of 105V. Again, to determine the trip setpoint a turns ratio of 35:1 is used for the potential transformers associated with safety-related buses 17 and 18G.The resulting trip value is 3675V or 88.34% of nominal bus voltage (105V x 35)/4160V . The allowable value was determined to be 3638V, or 87.44% of nominal bus voltage. This value is sufficiently above the safety limit of 3600V or 86.5% of nominal bus voltage to accommodate inaccuracies associated with the relays.

As discussed in Item 7a, the time delay shall be verified by using the manufacturer's published time curves.

Technical Specification Table 3.3-5

Item 13: In accordance with NRC Staff Position 1.f., this item should be added to provide for response time testing of the undervoltage relays for the loss of voltage condition and degraded voltage condition. The response time for the loss of voltage relays is based on the maximum time delay of 1.2 seconds with the voltage of 68% of nominal voltage as assumed in the SAR. The response time for the degraded voltage relays is based on the time delay associated with the undervoltage relays plus an additional time delay of 1 second associated with interposing relay and circuit breaker operation.

Technical Specification Table 4.3-2

Item 7: In accordance with NRC Staff Position 1.f., this item should be added to provide surveillance requirements for testing the undervoltage relays for the loss of voltage condition and degraded voltage condition. The final trip actuation relay is actuated during response time testing and is therefore excluded from the channel calibration and channel functional test.

Technical Specification 4.8.1.1.2

Para. c.3.a - This paragraph is deleted. Verification of emergency bus de-energization and load shedding is being added in Para. c.6.a. in accordance with NRC Staff Position 3.a. Since the same circuitry performs this function whether or not a safety injection signal is present, there is no reason to verify this function twice.

Para. c.5: Regulatory Position C.2 in Regulatory Guide 1.9, dated 3/10/71, states that the diesel generator loads should not exceed the smaller of the 2,000 hour rating, or 90% of the 30 minute rating of the diesel generator set. The 2,000 hour ratings of 4353 kw and 3,100 kw for the 4075 kw and 2850 kw diesel generators respectively are most limiting. The values presently included in the Technical Specifications do not reflect this limitation and should so be corrected.

Para.c.6.a: In accordance with NRC Staff Position 3.a., this surveillance requirement should be added to demonstrate for a loss of offsite power condition the emergency buses will be de-energized and load shed.

Para.c.6.b: In accordance with NRC Staff Position 3.b., this surveillance requirement should be added to demonstrate for a loss of offsite power condition the diesel generators will start automatically and energize the emergency buses with permanent loads and shutdown loads connected through the load sequencer.

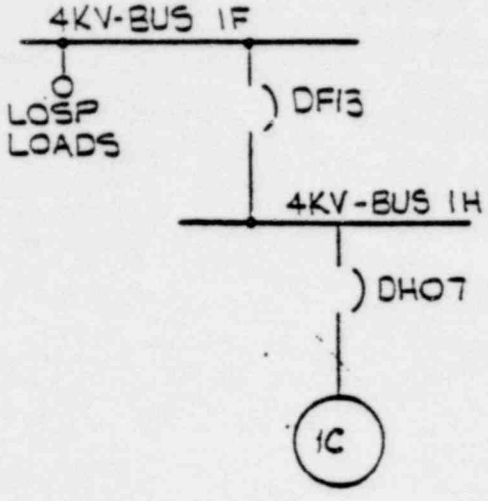
Para.c.7: In accordance with NRC Staff position 3.c., this surveillance requirement should be added to demonstrate the capability of the diesel generators to start with only a safety features actuation signal present.

Conclusion:

The proposed changes to Technical Specification Tables 3.3-3, 3.3-4, 3.3-5, 4.3-2, and Paragraph 4.8.1.1.2 do not involve an unreviewed safety question as defined by 10CFR50.59.

ATTACHMENT 1 - TIE BREAKER CASES

CASE 1

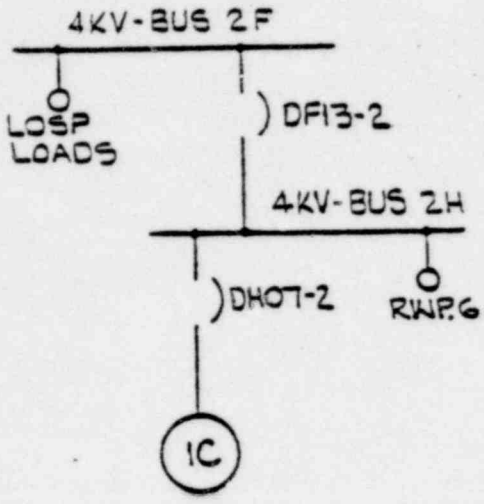


This configuration is the result of the following emergency situation:

- Two unit operation, LOSP on both units and LOCA on Unit 2

The inadvertent trip of the Tie Breaker DF13 will result in the automatic load shedding of 4 KV Bus 1F. Reclosing of the Tie Breaker DF13 and starting of the Unit 1 Train A LOSP loads on Bus 1F can be performed manually, from the Control Room. For this situation the Unit 1 Train B LOSP loads are supplied from Diesel Generator 1B through 4 KV Bus 1G.

CASE 2



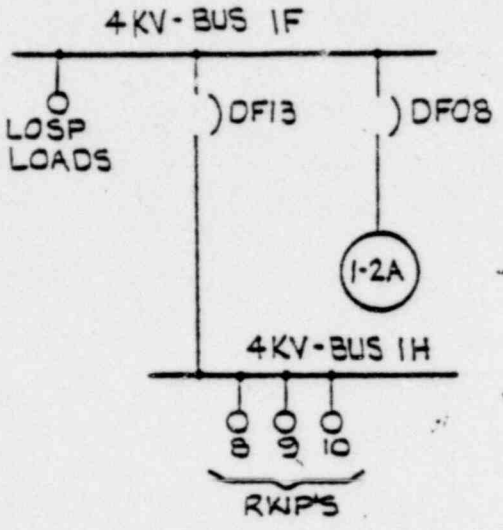
This configuration is the result of any one of the following emergency situations:

a. Two unit operation and LOSP on both units.

b. Two unit operation, LOSP on both units and LOCA on Unit 1.

The inadvertent trip of the Tie Breaker DF13-2 will result in the automatic load shedding of 4 KV Bus 2F. Reclosing of the Tie Breaker DF13-2 and starting of the Unit 2 Train A LOSP loads on Bus 2F can be performed manually from the Control Room. For this situation the Unit 2 Train B LOSP loads are supplied from Diesel Generator 2B through 4 KV Bus 2G.

CASE 3



This configuration is the result of any one of the following emergency situations:

a. Two unit operation and LOSP on both units.

b. Two unit operation and LOSP on Unit 1 only.

c. One unit operation (Unit 1), LOSP and Diesel Generator 1C not available.

The inadvertent trip of the Tie Breaker DF13 will result in the automatic load shedding of 4 KV Bus 1H. Reclosing of the Tie Breaker DF13 and starting of the Unit 1 Train A River Water Pumps 8, 9, 10 can be performed manually, from the Control Room.

For each of the emergency situations (a, b, c) described above and the inadvertent trip of the Tie Breaker DF13, the remaining river water pumps are:

a. Unit 2 Train A River Water Pump 6 on 4 KV Bus 2H, supplied from Diesel Generator 1C.

Unit 1 Train B River Water Pumps 4 and 5 on 4 KV Bus 1J, supplied from Diesel Generator 2C or from Diesel Generator 1B in the event that Diesel Generator 2C is not available.

Unit 2 Train B River Water Pumps 1, 2 and 3 on 4 KV Bus 2J, supplied from Diesel Generator 2C or from Diesel Generator 2B in the event that Diesel Generator 2C is not available.

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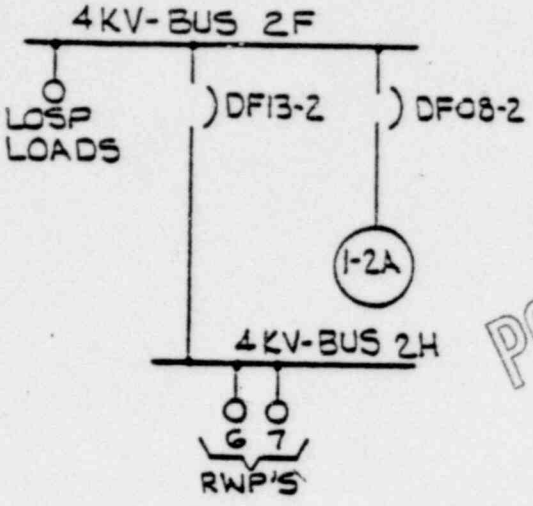
b. Unit 2 Train A River Water Pumps 6 and 7 on 4 KV Bus 2H supplied from offsite power.

Unit 1 Train B River Water Pumps 4 and 5 on 4 KV Bus 1J, supplied from Diesel Generator 2C or from Diesel Generator 1B in the event that Diesel Generator 2C is not available.

Unit 2 Train B River Water Pumps 1, 2 and 3 on 4 KV Bus 2J, supplied from offsite power.

c. Unit 1 Train B River Water Pumps 4 and 5 on 4 KV Bus 1J, supplied from Diesel Generator 2C or from Diesel Generator 1B in the event that Diesel Generator 2C is not available.

CASE 4



This configuration is the result of any one of the following emergency situations:

a. Two unit operation and LOSP on Unit 2 only.

b. One unit operation (Unit 2), LOSP and Diesel Generator 1C not available.

The inadvertent trip of the Tie Breaker DF13-2 will result in the automatic load shedding of 4 KV Bus 2H. Reclosing of the Tie Breaker DF13-2 and starting of the Unit 2 Train A River Water Pumps 6 and 7 can be performed manually, from the Control Room.

For each of the emergency situations (a and b) described above, and the inadvertent trip of the Tie Breaker DF13-2, the remaining river water pumps are:

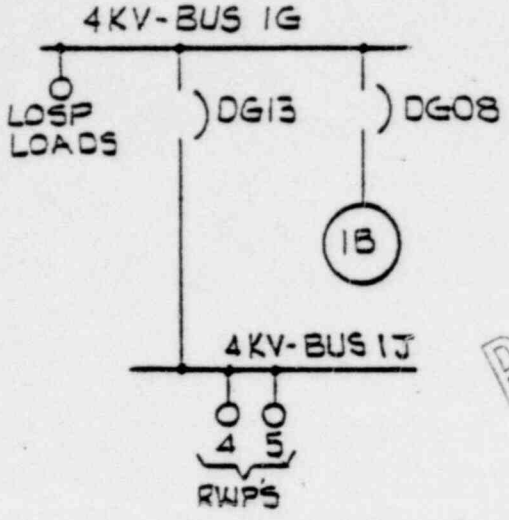
a. Unit 1 Train A River Water Pumps 8, 9 and 10 on 4 KV Bus 1H, supplied from offsite power.

   Unit 1 Train B River Water Pumps 4 and 5 on 4 KV Bus 1J, supplied from offsite power.

   Unit 2 Train B River Water Pumps 1, 2 and 3 on 4 KV Bus 2J, supplied from Diesel Generator 2C or from Diesel Generator 2B in the event that Diesel Generator 2C is not available.

b. Unit 2 Train B River Water Pumps 1, 2 and 3 on 4 KV Bus 2J, supplied from Diesel Generator 2C or from Diesel Generator 2B in the event that Diesel Generator 2C is not available.

CASE 5



This configuration is the result of any one of the following emergency situations:

a. Two unit operation, LOSP on both units and Diesel Generator 2C not available.

b. Two unit operation, LOSP on both units, LOCA on Unit 2 and Diesel Generator 2C not available.

c. Two unit operation, LOSP on Unit 1 only, and Diesel Generator 2C not available.

d. One unit operation (Unit 1), LOSP and Diesel Generator 2C not available.

The inadvertent trip of the Tie Breaker DG13 will result in the automatic load shedding of 4 KV Bus 1J. Reclosing of the Tie Breaker DG13 and starting of the Unit 1 Train B River Water Pumps 4 and 5 can be performed manually, from the Control Room.

For each of the emergency situations (a, b, c and d) described above, and the inadvertent trip of the Tie Breaker DG13, the remaining river water pumps are:

a. Unit 1 Train A River Water Pumps 8, 9 and 10 on 4 KV Bus 1H, supplied from Diesel Generator 1-2A.

   Unit 2 Train A River Water Pump 6 on 4 KV Bus 2H, supplied from Diesel Generator 1C.

   Unit 2 Train B River Water Pumps 1, 2 and 3 on 4 KV Bus 2J, supplied from Diesel Generator 2B.

b. None.

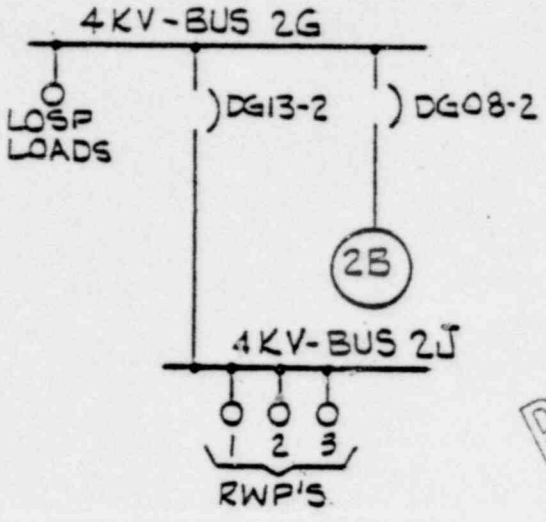
c. Unit 1 Train A River Water Pumps 8, 9 and 10 on 4 KV Bus 1H, supplied from Diesel Generator 1-2A.

Unit 2 Train A River Water Pumps 6 and 7 on 4 KV Bus 2H, supplied from offsite power.

Unit 2 Train B River Water Pumps 1, 2 and 3 on 4 KV Bus 2J, supplied from offsite power.

d. Unit 1 Train A River Water Pumps 8, 9 and 10 on 4 KV Bus 1H, supplied from Diesel Generator 1C, or from Diesel Generator 1-2A in the event that Diesel Generator 1C is not available.

CASE 6



This configuration is the result of any one of the following emergency situations:

a. Two unit operation, LOSP on both units and Diesel Generator 2C not available.

b. Two unit operation, LOSP on both units, LOCA on Unit 1 and Diesel Generator 2C not available.

c. Two unit operation, LOSP on Unit 2 only and Diesel Generator 2C not available.

d. One unit operation (Unit 2), LOSP and Diesel Generator 2C not available.

The inadvertent trip of the Tie Breaker DG13-2 will result in the automatic load shedding of 4 KV Bus 2J. Reclosing of the Tie Breaker DG13-2 and starting of the Unit 2 Train B River Water Pumps 1, 2 and 3 can be performed manually, from the Control Room.

For each of the emergency situations (a, b, c and d) described above, and the inadvertent trip of the Tie Breaker DG13-2, the remaining river water pumps are:

a. Unit 1 Train A River Water Pumps 8, 9 and 10 on 4 KV Bus 1H, supplied from Diesel Generator 1-2A.

Unit 2 Train A River Water Pump 6 on 4 KV Bus 2H, supplied from Diesel Generator 1C.

Unit 1 Train B River Water Pumps 4 and 5 on 4 KV Bus 1J, supplied from Diesel Generator 1B.

b. Unit 2 Train A River Water Pump 6 on 4 KV Bus 2H, supplied from Diesel Generator 1C.

c. Unit 1 Train A River Water Pumps 8, 9 and 10 on 4 KV Bus 1H, supplied from offsite power.

Unit 2 Train A River Water Pumps 6 and 7 on 4 KV Bus 2H, supplied from Diesel Generator 1-2A.

Unit 1 Train B River Water Pumps 4 and 5 on 4 KV Bus 1J, supplied from offsite power.

d. Unit 2 Train A River Water Pumps 6 and 7 on 4 KV Bus 2H, supplied from Diesel Generator 1C or from Diesel Generator 1-2A in the event that Diesel Generator 1C is not available.