August 24, 199.

Docket No. 50-382

Mr. Ross P. Barkhurst
Vice President Operations
Entergy Operations, Inc.
Post Office Box B
Killona, Louisiana 70066

Dear Mr. Barkhurst:

SUBJECT: ISSUANCE OF AMENDMENT NO. 74 TO FACILITY OPERATING LICENSE NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3 (TAC NO. M83411)

The Commission has issued the enclosed Amendment No. 74 to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated May 11, 1992.

The amendment changes the Appendix A Technical Specifications by revising the Engineered Safety Feature Actuation Instrumentation and A.C. Sources-Operating to adjust the degraded voltage protection relay setpoints.

A copy of our related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,
Original signed by:

David L. Wigginton, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 74 to NPF-38
2. Safety Evaluation

cc w/enclosures:
See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

August 24, 1992

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Mr. Ross P. Barkhurst
Vice President Operations
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David L. Wigginton, Senior Project Manager
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Enclosures:
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cc w/enclosures:
See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 74
License No. NPF-38

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Entergy Operations, Inc. (the licensee) dated May 11, 1992, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-38 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 74 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

John T. Larkins, Director
Project Directorate IV-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 24, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 74

TO FACILITY OPERATING LICENSE NO. NPF-38

DOCKET NO. 50-382

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE PAGES	INSERT PAGES
3/4 3-19	3/4 3-19*
3/4 3-20	3/4 3-20
3/4 3-23	3/4 3-23
3/4 3-24	3/4 3-24*
3/4 8-3	3/4 8-3
3/4 8-4	3/4 8-4*
3/4 8-5	3/4 8-5
3/4 8-6	3/4 8-6

* Overleaf pages provided for convenience.

TABLE 3.3-4

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
1. SAFETY INJECTION (SIAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Containment Pressure - High	$\leq$ 17.1 psia	$\leq$ 17.3 psia
c. Pressurizer Pressure - Low	$\geq$ 1684 psia(1)	$\geq$ 1644 psia(1)
d. Automatic Actuation Logic	Not Applicable	Not Applicable
2. CONTAINMENT SPRAY (CSAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Containment Pressure -- High-High	$\leq$ 17.7 psia	$\leq$ 18.0 psia
c. Automatic Actuation Logic	Not Applicable	Not Applicable
3. CONTAINMENT ISOLATION (CIAS)		
a. Manual CIAS (Trip Buttons)	Not Applicable	Not Applicable
b. Containment Pressure - High	$\leq$ 17.1 psia	$\leq$ 17.3 psia
c. Pressurizer Pressure - Low	$\geq$ 1684 psia(1)	$\geq$ 1644 psia(1)
d. Automatic Actuation Logic	Not Applicable	Not Applicable
4. MAIN STEAM LINE ISOLATION		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Steam Generator Pressure - Low	$\geq$ 764 psia(2)	$\geq$ 748 psia(2)
c. Containment Pressure - High	$\leq$ 17.1 psia	$\leq$ 17.3 psia
d. Automatic Actuation Logic	Not Applicable	Not Applicable

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP VALUE	ALLOWABLE VALUES
5. SAFETY INJECTION SYSTEM SUMP RECIRCULATION (RAS)		
a. Manual RAS (Trip Buttons)	Not Applicable	Not Applicable
b. Refueling Water Storage Pool - Low	10.0% (57,967 gallons)	9.3% (53,910 gallons)
c. Automatic Actuation Logic	Not Applicable	Not Applicable
6. LOSS OF POWER		
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)	$\geq$ 3245 volts	$\geq$ 3245 volts
b. 480 V Emergency Bus Undervoltage	$\geq$ 372 volts	$\geq$ 354 volts
c. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	$\geq$ 3875 volts	$\geq$ 3860 volts
7. EMERGENCY FEEDWATER (EFAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Steam Generator (1&2) Level - Low	$\geq$ 27.4%(3) (4)	$\geq$ 26.7%(3) (4)
c. Steam Generator ΔP - High (SG-1 > SG-2)	$\leq$ 127.6 psid	$\leq$ 136.6 psid
d. Steam Generator ΔP - High (SG-2 > SG-1)	$\leq$ 127.6 psid	$\leq$ 136.6 psid
e. Steam Generator (1&2) Pressure - Low	$\geq$ 764 psia(2)	$\geq$ 748 psia(2)
f. Automatic Actuation Logic	Not Applicable	Not Applicable
g. Control Valve Logic (Wide Range SG Level - Low)	$\geq$ 36.3%(3) (5)	$\geq$ 35.3%(3) (5)

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
2. Pressurizer Pressure-Low	
a. Safety Injection (ECCS)	
(1) High Pressure Safety Injection	≤ 30.0*/18.5**
(2) Low Pressure Safety Injection	≤ 45.5*/34.0**
b. Containment Isolation	≤ 23.5*/12.0**
c. Containment Cooling	≤ 31.0*/19.5**
3. Containment Pressure-High	
a. Safety Injection (ECCS)	
(1) High Pressure Safety Injection	≤ 30.0*/18.5**
(2) Low Pressure Safety Injection	≤ 45.5*/34.0**
b. Containment Isolation	≤ 23.5*/12.0**
c. Main Steam Isolation	≤ 4.0*/4.0**
d. Main Feedwater Isolation	≤ 6.0*/6.0**
e. Containment Cooling	≤ 31.0*/19.5**
4. Containment Pressure--High-High	
a. Containment Spray Pump	≤ 15.2*/2.7**
b. Containment Spray Valves	≤ 11.0*/11.0**
c. CCW to RCP Valves	≤ 23.5*/12.0**
5. Containment Area Radiation-High#	
Containment Purge Valves Isolation	≤ 6.2*/6.2**
6. Steam Generator Pressure-Low	
a. Main Steam Isolation	≤ 4.0*/4.0**
b. Main Feedwater Isolation	≤ 6.0*/6.0**
7. Refueling Water Storage Pool-Low	
Containment Sump Recirculation	≤ 120.0*/108.5**
8. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)	
Loss of Power (0 volts)	≤ 2***
9. 480V Emergency Bus Undervoltage (Loss of Voltage)	
Loss of Power (0 volts)	N.A.
10. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	
Loss of Power	≤ 14***

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
11. Steam Generator Level-Low	
Emergency Feedwater Pump and Block Valves	$\leq$ 54.0*/42.0**
12. Wide Range Steam Generator Level-Low	
Emergency Feedwater Control Valves	$\leq$ 25.0*/25.0**
NOTE: Response time for all Motor-Driven and Steam-Driven Emergency Feedwater Pumps on all ESF signal starts.	$\leq$ 54.0

TABLE NOTATIONS

*Diesel generator starting and sequence loading delays included. Response time limit includes movement of valves and attainment of pump or blower discharge pressure.

**Diesel generator starting and sequence loading delays not included. Offsite power available. Response time limit includes movement of valves and attainment of pump or blower discharge pressure.

***Response time measured from the sensing relay to the channel output only.

#Response time does not include the detector.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availablity, and

b. Demonstrated OPERABLE at least once per 18 months by transferring manually and automatically unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE*:

a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:

1. Verifying the fuel level in the diesel oil feed tank,

2. Verifying the fuel level in the diesel generator fuel oil storage tank,

3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the diesel oil feed tank,

4. Verifying the diesel starts and accelerates to at least 600 rpm (60 ± 1.2 Hz) in less than or equal to 10 seconds. The generator voltage and frequency shall be 4160 + 420,-240 volts and 60 ± 1.2 Hz within 10 seconds after the start signal. The diesel generator shall be started for this test by using one of the following signals:

a) Manual.

b) Simulated loss-of-offsite power by itself.

c) Simulated loss-of-offsite power in conjunction with an ESF actuation test signal.

d) An ESF actuation test signal by itself.

*All planned starts for the purpose of surveillance in this section may be preceded by a prelube period as recommended by the manufacturer.

5. Verifying the generator is synchronized (10 seconds), subsequently loaded to an indicated 4200-4400 Kw* in less than or equal to 176 seconds,** and operates for at least an additional 60 minutes, and

6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.

b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the diesel oil feed tanks.

c. At least once per 92 days and from new fuel oil prior to addition to the storage tanks, by obtaining a sample of fuel oil in accordance with ASTM-D270-1975, and by verifying that the sample meets the following minimum requirements and is tested within the specified time limits:

1. As soon as sample is taken (or prior to adding new fuel to the storage tank) verify in accordance with the test specified in ASTM-D975-77 that the sample has:

a) A water and sediment content of less or equal to 0.05 volume percent.

b) A kinematic viscosity @ 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes.

c) A specific gravity as specified by the manufacturer @ 60/60°F of greater than or equal to 0.80 but less than or equal to 0.99 or an API gravity @ 60°F of greater than or equal to 11 degrees but less than or equal to 47 degrees.

2. Verify an impurity level of less than 2 mg of insolubles per 100 ml when tested in accordance with ASTM-D2274-70; analysis shall be completed within 7 days after obtaining the sample but may be performed after the addition of new fuel oil; and

*This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variation due to changing bus loads shall not invalidate the test.

**The diesel generator fast loading requirement (176 sec) shall be performed at least once per 184 days in these surveillance tests. For all other surveillance tests, load the diesel generator at a rate consistent with the manufacturer's recommendations.

SURVEILLANCE REQUIREMENTS (Continued)

3. Verify the other properties specified in Table 1 of ASTM-D975-1977 and Regulatory Guide 1.137, Revision 1, October 1979, Position 2.a., when tested in accordance with ASTM-D975-1977; analysis shall be completed within 14 days after obtaining the sample but may be performed after the addition of new fuel oil. Failure to meet this requirement shall not affect diesel generator OPERABILITY; however, corrective action shall be initiated within 72 hours to return the fuel oil supply to within acceptable limits.

d. At least once per 18 months during shutdown by:

1. Verifying the generator capability to reject a load of greater than or equal to 498 kW (HPSI pump) while maintaining voltage at 4160 + 420,-240 volts and frequency at 60 +4.5, -1.2 Hz.

2. Verifying the generator capability to reject a load of 4400 kW without tripping. The generator voltage shall not exceed 4784 volts during and following the load rejection.

3. Simulating a loss-of-offsite power by itself, and:

a) Verifying deenergization of the emergency busses and load shedding from the emergency busses.

b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds after the auto-start signal, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at 4160 + 420,-240 volts and 60 + 1.2, -0.3 Hz during this test.

4. Verifying that on an SIAS actuation test signal (without loss-of-offsite power) the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The steady-state generator voltage and frequency shall be 4160 + 420,-240 volts and 60 ± 1.2 Hz within 10 seconds after the auto-start signal; the generator voltage and frequency shall be maintained within these limits during this test.

SURVEILLANCE REQUIREMENTS (Continued)

5. Simulating a loss-of-offsite power in conjunction with an SIAS actuation test signal, and

   a) Verifying deenergization of the emergency busses and load shedding from the emergency busses.

   b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds after the auto-start signal, energizes the auto-connected emergency loads through the load sequencer and operates for greater than or equal to 5 minutes. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at 4160 + 420,-240 volts and 60 + 1.2, -0.3 Hz during this test.

   c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential, are automatically bypassed upon loss of voltage on the emergency bus concurrent with a safety injection actuation signal.

6. Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to an indicated 4700 to 4900 Kw* and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 4200 to 4400 Kw.* The generator voltage and freqency shall be 4160 + 420,-240 volts and 60 ± 1.2 Hz within 10 seconds after the start signal; the steady-state generator voltage and frequency shall be 4160 ± 420 volts and 60 + 1.2, -0.3 Hz during this test. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.d.3b.**

7. Verifying that the auto-connected loads to each diesel generator do not exceed the 2000-hour rating of 4400 kW.

*This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing under direct monitoring of the manufacturer or momentary variation due to changing bus loads shall not invalidate the test.

**If Surveillance Requirement 4.8.1.1.2d.3b is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at an indicated 4200-4400 kw* for 1 hour or until internal operating temperatures have stabilized.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 74 TO

FACILITY OPERATING LICENSE NO. NPF-38

ENTERGY OPERATIONS, INC.

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

1.0 INTRODUCTION

By application dated May 11, 1992, Entergy Operations, Inc. (the licensee) submitted a request for changes to the Waterford Steam Electric Station, Unit 3 (Waterford 3), Technical Specifications (TS). The requested changes would revise TS 3/4.3.2, "Engineered Safety Features Actuation Instrumentation," and TS 3/4/8/1, "A.C. Sources-Operating," to adjust the degraded voltage protection relay setpoints.

2.0 EVALUATION

The staff has reviewed the licensee's submittal and provides the following evaluation.

During an NRC inspection conducted from December 4, 1990, through February 1, 1991, at Waterford 3, violations of NRC requirements were identified. The violations involved a failure to verify or to check the adequacy of design and the failure to establish, follow, and maintain procedures appropriate to the circumstances.

2.1 Failure to Verify or to Check the Adequacy of Design

Criterion III of Appendix B to 10 CFR Part 50 requires that design control measures be established for verifying or checking the adequacy of a design and for assuring that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. Contrary to the above, the degraded grid (undervoltage) relay setpoint calculations for Waterford 3 did not analyze for potential undervoltage conditions for Class 1E loads at all onsite electrical system distribution levels. The existing 4160 Vac undervoltage protective relays were set at trip setpoints that would have resulted in inoperable downstream 120 Vac safety-related equipment for degraded voltage conditions.

2.2 Failure to Establish, Follow, and Maintain Procedures Appropriate to the Circumstances

TS Section 6.8.1 requires that written procedures be established, implemented, and maintained for activities such as the calibration, testing, and adjustment of equipment that provides an interlock-permissive or -prohibit function. Contrary to the above, Surveillance Procedures ME-003-319, "GE Undervoltage Relay Model 12NGV13B, Revision 4," directed setting the relay setpoints at Waterford 3 at the TS value without adequate consideration of tolerance or potential drift. Furthermore, the procedures did not provide adequate guidance for engineering review responsibilities should the relay be found outside the acceptance band.

The following TS changes by the licensee are being proposed as a result of the above issues raised during the NRC Electrical Distribution System Functional Inspection (EDSFI):

1. In Table 3.3-4, "Engineered Safety Feature Actuation System Trip Values of Specification 3/4.3.2," the "Trip Values" and "Allowable Values" for the 4160 volt emergency bus undervoltage (degraded voltage) are being changed from $\geq$ 3640 volts and $\geq$ 3604 to $\geq$ 3875 volts and $\geq$ 3860 volts, respectively.

2. In Table 3.3-5, "Engineered Safety Feature Response Time of Specification 3/4.3.2," the 4160 volt emergency bus undervoltage (degraded voltage) "Response Time in Seconds" is being changed from $\leq$ 11 seconds to $\leq$ 14 seconds.

3. In TS 3/4.8.1, "A.C. Sources", the emergency diesel generator minimum voltage of Surveillance Requirement 4.8.1.12 paragraphs A.4, D.1, D.3.b, D.4, D.5.b, and D.6 is being changed from 4160 $\pm$ 420 volts to 4160 +420/-240 volts.

2.3 Engineered Safety Feature Actuation System Trip Values

The NRC, in reviewing protective relaying, concluded that the TS trip setpoint and the allowable value for the 4160 volt bus degraded relays were too low to ensure proper operation of all Class 1E equipment (i.e., downstream loads) if the bus voltage degraded down to a value slightly above the established setpoint. In addition, the NRC found the existing G.E. NGV degraded (undervoltage) voltage relay to have excessive drift due to the adjustment potentiometer. In response to the concerns, Waterford 3 conducted an engineering review and reanalysis of the electrical distribution system to establish the TS trip setpoints and allowable values for the degraded voltage relays. The new analysis established a TS allowable value of 3860V (92.8% of 4160) and a trip value of 3875V (93.1 % of 4160V). The allowable value is based on the minimum voltage required by safety equipment plus uncertainty for equipment inaccuracy. The trip value is based on the allowable value plus the relay drift value. Additional corrective actions involve installing new solid state relays (i.e. during refueling), conducting load flow and voltage drop

analyses, and imposing Standing Instruction 91-02. The standing instruction, issued on January 23, 1991, is used to monitor the grid voltage for degraded conditions. When the grid decays to 223kV or less, operations personnel are required to:

1) trip the reactor, if critical;

2) start both emergency diesels;

3) after confirming satisfactory voltage and frequency of the emergency diesel generators (EDGs), separate the 1E and non-1E buses by opening the tie breakers at the 4160 volt level; and

4) allow the EDGs to carry the safety-related loads until grid conditions improve and the EDGs can be systematically shutdown.

2.4 Engineered Safety Feature Response Time

The degraded voltage "Response Time in Seconds" as provided in Table 3.3-5 is based on the relay timer setpoint. The degraded voltage relay timer setpoint is based on the time it takes for a motor to start and accelerate. The degraded voltage protection system time relays accommodate the voltage drops resulting from starting motors by blocking actuation of the degraded voltage protection system. If, during this time delay, the bus voltage recovers to a level above the reset value of the degraded voltage protection system, the system will reset and no further action will be required. Analysis done by the licensee determined the motor acceleration time to be 11.1 seconds. This value was adjusted to include the timer tolerance of $\pm$ 10% and another $\pm$ 10% to accommodate potential positive drift. The result of the analysis by the licensee was a degraded voltage relay response time setpoint of 14 seconds. The analysis evaluated the impact on running motors at a voltage value slightly above the loss of voltage trip for the extended time delay to determine any detrimental effects, and concluded that running motors would not stall and motor qualifications would not be adversely impacted.

2.5 Emergency Diesel Generator Minimum Voltage

The final TS change is based on the revision of the reset values of the minimum voltage relay and assures that the minimum voltage output of the emergency diesel generator (EDG) is adequate before the bus loads are connected and the degraded voltage relays resets. The current minimum voltage of 3740V will be changed to 3920V or 4160V minus 240V. This change will ensure the degraded voltage relay will reset under the worst equipment drift and inaccuracy conditions.

The TS changes identified above are supported by the new analysis and dependent upon several modifications to the electrical auxiliary system as briefly described below:

1. The control element drive mechanism (CEDM) fans presently do not trip upon initiation of a safety injection actuation signal (SIAS). The control logic will be changed to trip all four CEDM fans upon initiation of a SIAS. If the CEDM fans were not tripped, the degraded voltage setpoint would be higher and would potentially subject the degraded voltage relay to inadvertent trips.

2. The three heater drain pumps will be tripped upon actuation of a generator lockout relay. The heater drain pumps are not required for safe shutdown. If the heater drain pumps were not tripped, the degraded voltage relay would trip at a grid voltage slightly below the normal minimum voltage. Thus, tripping the heater drain pumps will allow the grid to degrade to a value well below the normal minimum grid voltage without tripping the degraded voltage relay.

3. The safety-related transformers for Power Distribution Panels 360/394-SA, 361/395-SB, 362/SAB, 3004-SA, and 3005-S will have their tap setting changed from center to -5%. This tap setting will improve the 120 volt system voltage to an acceptable value during a degraded voltage condition.

4. The present degraded voltage computer alarm will be modified to include an annunciator window that will alarm prior to tripping the degraded voltage relay. This annunciator will warn the operator to beware of a potential trip due to degraded voltage and to avoid starting any motors.

5. The load on Power Distribution Panel 360-SA will be balanced to provide a uniform voltage drop at the 120 volt system. This will improve the 120 volt system voltage to an acceptable value during a degraded voltage condition.

6. The existing G.E. NGV electromechanical and agastat timing relays will be replaced with ABB 27N electronic relays. The existing G.E. relays were found to have excessive drift due to the calibration potentiometer. The new relays have a self-test feature and a "target" to indicate that the relay has tripped - features not present on the existing relays. The electronic relays are more accurate (+0.1%) and will be set to reset at approximately 0.4% (15V) above setpoint.

7. To increase voltage at the starter coils and other auxiliary devices (120V relays, solenoids, etc.) to an acceptable level during degraded conditions, some control cables will be paralleled or the existing control power transformer will be replaced with a larger transformer.

2.6 Conclusion

Branch Technical Position (BTP) PSB-1, "Adequacy of Station Electrical Distribution System Voltages," provided the criteria for determining adequate degraded voltage protection. In an engineering review and reanalysis of the electrical distribution system, the licensee has addressed the requirements of BTP PSB-1 to establish the TS trip setpoints and allowable values for the degraded grid relays. The staff agrees that the revised trip settings, reset voltages, and time delays for the degraded voltage relays will help to establish an optimum voltage for all safety-related buses. The proposed changes and modifications will not change the design, function, or method of operation of Class 1E equipment at Waterford Unit 3 and will not create the possibility of a new or different kind of accident from any previously evaluated. The staff concludes that the proposed TS changes and modifications described in this SE will improve the reliability and protection of Class 1E equipment during degraded grid conditions and will not pose a threat to the public health and safety. Therefore, these proposed changes to the Waterford 3 TS are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Louisiana State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (57 FR 28200). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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