



ENTERGY

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Waterford 3

W3F1-94-0159
A4.05
PR

September 9, 1994

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
Request for Enforcement Discretion
Technical Specification 4.8.1.1.2.d Electrical Power Systems
Emergency Technical Specification Change Request NPF-38-158

Gentlemen:

This letter provides written documentation to follow-up Entergy Operations, Inc.'s verbal request on September 9, 1994, regarding a request for enforcement discretion from Waterford 3 Technical Specification (TS) 3/4.8 Electrical Power Systems 3/4.8.1 A.C. Sources Operating. The enforcement discretion is requested to extend the Allowed Outage Time of Action 3.8.1.1.b (72 hours) for an additional seven days to allow the staff to review and approve the attached proposed Emergency Technical Specification Change Request. The condition associated with this request will exist until Refueling Outage No. 7 currently scheduled to begin September 15, 1995. This request was evaluated and determined not to have a potential adverse impact on the public health and safety. The basis for this request is attached; it has been reviewed by the Plant Operations Review Committee, approved by the General Manager - Plant Operations and approved by the Safety Review Committee.

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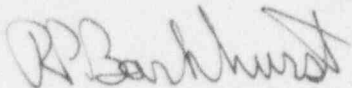
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Should you have further questions concerning the attached information,
please contact D.W. Vinci at (504) 739-6370.

Very truly yours,



R.P. Barkhurst
Vice President, Operations
Waterford 3

RPB/PLC/ssf
Attachments

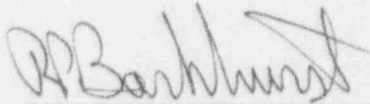
cc: L.J. Callan, NRC Region IV
J.W. Roe, NRC-NRR
E.G. Adensam, NRC-NRR
D.L. Wigginton, NRC-NRR
R.B. McGehee
N.S. Reynolds
Administrator Radiation Protection Division
(State of Louisiana)
American Nuclear Insurers
NRC Resident Inspectors Office

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of)
)
Entergy Operations, Incorporated) Docket No. 50-382
Waterford 3 Steam Electric Station)

AFFIDAVIT

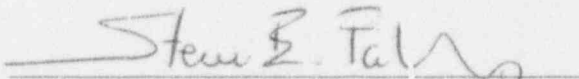
R.P. Barkhurst, being duly sworn, hereby deposes and says that he is Vice President Operations - Waterford 3 of Entergy Operations, Incorporated; that he is duly authorized to sign and file with the Nuclear Regulatory Commission the attached Request for Enforcement Discretion- Emergency Technical Specification Change Request NPF-38-158; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.



R.P. Barkhurst
Vice President Operations - Waterford 3

STATE OF LOUISIANA)
) ss
PARISH OF ST. CHARLES)

Subscribed and sworn to before me, a Notary Public in and for the Parish and State above named this 9TH day of SEPTEMBER, 1994.


Notary Public

My Commission expires WITH LIFE.

Waterford 3 Request for Enforcement Discretion
for Technical Specification 4.8.1.1.2.d
"Electrical Power Systems"

SPECIFIC REQUIREMENTS THAT ARE NOT MET

Technical Specification Requirements

Waterford 3 Technical Specification 4.8.1.1.2.d requires the EDG to be verified operable by performing the following integrated tests on an 18 month frequency during plant shutdown.

TS 4.8.1.1.2.d.3a & 3b:

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 and 60 ± 1.2 , -0.3 Hz during this test.

TS 4.8.1.1.2.d.5a & 5b:

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.

Implementation of the Surveillance Requirements above demonstrate the as designed operation of the standby A.C. power sources during loss of the offsite power source and during a loss of offsite power in conjunction with an Safety Injection Actuation Signal (SIAS).

The test verifies all actions encountered from the loss of offsite power, including shedding of the nonessential loads and energization of the emergency busses and respective loads from the Emergency Diesel Generator (EDG). It further demonstrates the capability of the EDG to automatically achieve the required voltage and frequency within the specified time.

The requirement to verify the connection and power supply of permanent and auto-connected loads is intended to satisfactorily show the relationship of these loads to the EDG loading logic. In the event of a Design Bases Accident (DBA) coincident with a loss of offsite power, the EDGs are required to supply the necessary power to Engineered Safety Features (ESF) systems so that the fuel, Reactor Coolant System (RCS), and containment design limits are not exceeded.

The standby 3AB3-S bus is connected to either bus 3A3-S or bus 3B3-S, but never to both, so that the two divisions, Train A and Train B are electrically independent. Similarly, 480V bus 3AB31-S is tied to the same division (via the 480v bus 3A31-S or 3B31-S) as 4160V bus 3AB3-S at all times (see Figure 01).

Waterford 3 implements the above TS requirements with Plant Operating Procedures OP-903-115, "Train A Integrated Emergency Diesel Generator/Engineering Safety Features Test," and OP-903-116, "Train B Integrated Emergency Diesel Generator/Engineering Safety Features Test". These procedures perform the integrated EDG tests on Train A and B respectively. When testing Train A, the Engineered Safety Features (ESF) Train AB buses are aligned to the B Train. During testing of Train B, the ESF Train AB buses are aligned to the A Train. Thus, the ESF Train AB buses and their components were never subjected to the integrated Emergency Diesel Generator/Engineered Safety Features Test. Upon discovery of this condition, Waterford 3 declared EDG B inoperable due to the present plant configuration and entered TS Action 3.8.1.1.b. This Action requires the restoration of the affected EDG within 72 hours or be in at least Hot Standby within the next 6 hours and in Cold Shutdown within the following 30 hours.

CIRCUMSTANCES OF EVENT

On September 7, 1994, a Reactor Operator attending Senior Reactor Operator (SRO) training class questioned why Surveillance Procedure OP-903-001, "Technical Specification Logs," requires daily verification that the undervoltage coils on the AB busses are operating satisfactorily.

In response to that question, an SRO Senior Instructor commenced a review of applicable Technical Specifications and Surveillance Procedures. The review revealed that Surveillance Procedures OP-903-115 and OP-903-116 may not adequately satisfy TS Surveillance requirements related to demonstrating full-load-carrying and load shedding capability of the Emergency Diesel Generators.

The instructor immediately notified his supervisor (a current active SRO who has filled the SRO position on-shift for many years). The supervisor informed the Control Room of the condition and directed the instructor to initiate a Condition Report (CR). After initiating the CR, the instructor immediately hand carried the CR to the Control Room. By 1316 hours, the condition had been confirmed, Emergency Diesel Generator 'B' was declared inoperable (the AB bus was aligned to the B side at that time) and TS Action 3.8.1.1.b was entered.

ADVERSE CONSEQUENCES

The probability of sustained plant operation until Refuel 7 without the utilization of the AB components is low. The AB safety-related components are required to support some surveillance testing of A or B train components, act as a substitute due to a failure of an A or B train component, and improve long term plant operations. The AB non-safety components are mainly needed to support normal turbine-generator operation for personnel safety e.g., Hydrogen Seal Oil Pump and Bearing Oil Pump.

Waterford 3 feels that there is adequate justification for extending the Allowed Outage Time of 72 hours while pursuing a TS change that would allow returning EDG B to operable status and avoid an unnecessary plant shutdown and associated plant perturbations. In addition, minimizing transients that could worsen the condition of a small fuel leak (as described in Waterford 3 submittal dated August 19, 1994) is a desired course of action.

COMPENSATORY MEASURES

Third-of-a-kind safety related equipment consisting of a High Pressure Safety Injection (HPSI) Pump, a Component Cooling Water (CCW) Pump, and an Essential Services (ESS) Chiller are tied to the 4160V 3AB3-S bus. Equipment consisting of a safety-related Charging Pump, and the non-safety Motor Driven (MD) Fire Pump, and the alternate power supply to Plant Monitoring Computer (PMC) Static Uninterruptable Power Supply (SUPS) are connected to the 480V switchgear 3AB31-S bus. There are also three Motor Control Center (MCC) Busses connected to the 3AB31-S 480V bus; safety-related MCC 3AB311 and non safety-related MCC 3AB312 and MCC 3AB313. The safety-related permanently connected MCC 3AB311 supplies power to the third-of-a-kind support equipment, some non-safety loads with appropriate isolation devices and the 3AB1-S and 3AB2-S battery chargers. On loss of power to MCC 3AB311, these chargers are designed to shed and subsequently auto-connect.

Currently Waterford 3 has issued a standing order in the control room prohibiting the alignment of any of the third-of-a-kind AB components. The feeder breaker supplying the backup power supply to the PMC SUPS has been tagged in the open position. Other activities in the standing order include verifying upon a loss of offsite power 1) the proper shedding of nonessential loads, 2) the energization of the emergency busses and respective loads from the EDG, and 3) EDG loading requirements are not exceeded.

Additional compensatory measures have been verified as follows:

Shedding of Nonessential Loads

It was verified that nonessential loads MCC 3AB312, MCC 3AB313, MD Fire Pump and PMC SUPS Alternate power supplied from 3AB31-S are designed to trip upon Loss of Power (LOP). The design operation of these components with the exception of the PMC SUPS was actually confirmed as the result of unplanned events in 1990. Because the SUPS alternate power supply is not normally supplying power the stripping and reloading could not be expected. However, as described above, the feeder breaker supplying the backup power supply to the PMC SUPS has been placed in the open position. Also, more recent confirmation is available as a result of performing a "dead bus" transfer during the last refueling outage conducted earlier this year. When transferring the AB bus to the A or B train, the above nonessential

loads are tripped and must be reset per plant operating procedure. The procedure does not require a signoff for this activity, however, plant personnel recalled resetting the nonessential loads (except the PMC SUPS) per the procedure. Additionally, a review of plant records indicate that no malfunctions related to expected operation of this feature were identified. Therefore, we are confident that these nonessential loads do in fact shed when called upon.

Energization of Permanently Connected Loads

Energization of the emergency bus and essential loads was verified by ensuring that the feeder breaker of MCC 3AB311-S is designed not to trip with a LOP. In addition, the AB busses and MCC 3AB311-S were observed to function properly during the 1990 events and during the last refueling outage as discussed above.

Review confirmed that the 3AB1-S and 3AB2-S battery chargers are designed to trip and automatically reload when power to 3AB31-S is restored. This is confirmed by plant operating procedures which require no manual actions by operations personnel to restore 3AB1-S and 3AB2-S battery chargers (i.e. the 3AB1-S and 3AB2-S battery chargers are restored automatically) upon completion of the transfer of 3AB31-S. However, it could not be confirmed that battery charger 3AB1-S and 3AB2-S trip and reload at the proper time sequence. This should not adversely impact the EDG loading from a dynamic viewpoint since the load change of both battery chargers at maximum load (i.e., "current limit" feature) would only be 2.5% of the total EDG load, a relatively insignificant load change. The Emergency Diesel Generator Dynamic Loading Study shows that load changes of 2000KW, which represents approximately 50% of the EDG continuous rating, are acceptable.

EDG loading Requirements

The steady state and dynamic EDG load calculations were reviewed and verified to account for the loads supplied from MCC 3AB311-S. The current calculations show the EDG loading is acceptable with the load of MCC 3AB311-S. In the 1990 unplanned events, this load was successfully carried by each EDG. Thus, loads supplied from MCC 3AB311-S will not cause the EDG to exceed its full load rating. In addition, an analysis was performed to evaluate the loading on the EDG if the nonessential loads i.e., 3AB312, 3AB313 and MD Fire Pump failed to shed. The evaluation determined that if MCC 3AB312 and MCC 3AB313 failed to shed the EDG would experience a load of 4320.5 KW, slightly below the EDG continuous rating of 4400 KW. If both MCCs and the MD Fire Pump failed to shed the EDG would

experience a load of 4476.1 KW which is inclusive of LOCA loads. This is slightly above the continuous rating but below the 4840 KW 2 hour rating. It should be noted that the MD Fire Pump will only run if there is a loss of system pressure, expected to occur as a result of a fire.

SAFETY SIGNIFICANCE OF PROPOSED DEVIATION

Based on the above, Waterford 3 feels that the requirement to demonstrate the as designed operation of the standby A.C. power source during loss of the offsite power source and during a loss of offsite power in conjunction with an Safety Injection Actuation Signal (SIAS) has been met. The activities conducted have verified that shedding of the nonessential loads and energization of the emergency busses and respective loads by the EDG can be expected to occur. The objective evidence provided above, in conjunction with compensatory measures that have removed the AB third-of-a-kind components from service and opened the PMC SUPS alternate power supply breakers, is considered adequate assurance that EDG B is currently capable of performing its safety function in the event that it is called upon. Therefore, EDG B should be considered operable.

An integrated EDG test including the AB bus cannot be performed without a plant shutdown. For reasons discussed above, Waterford 3 proposes the following Emergency Technical Specification (TS) Change Request to allow restoration of EDG B to an operable status for the remainder of cycle 7.

The proposed TS change adds a provision to Surveillance Requirements 4.8.1.1.d.3a; 3b; 5a and 5b that would be applicable until STARTUP (i.e., Mode 2) following Refuel 7. In lieu of the specified integrated tests, the proposed change would allow testing and analysis that shows the capability of the EDG system to perform its functions i.e., shedding, connection, and loading of loads. The provision would apply to the Train AB ESF loads with the exception of the permanently connected MCC 3AB311-S that has been verified acceptable via analysis.

Upon approval of the proposed change EDG B would be declared operable. Subsequently, other loads (i.e., third-of-a-kind components) will be tested as follows prior to being declared operable. The loads that require testing to restore operability are Component Cooling Water Pump AB, Essential Chiller AB, High Pressure Safety Injection Pump AB and Charging Pump AB. The only non-safety load that requires testing is the PMC SUPS alternate power supply. This load will only be tested for shedding. Testing will subject these AB components to loss of voltage (LOV) and/or SIAS signals

(or simulation of these signals) that would be present in the integrated test required by technical specification. The resulting automatic tripping and closing of the AB component breakers will simulate starting and stopping that would occur with the loading of EDG.

Existing Specification

See Attachment A

Proposed Specification

See Attachment B

Safety Analysis

The proposed change described above shall be deemed to involve a significant hazards consideration if there is a positive finding in any of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of any accident previously evaluated?

Response: No

The proposed change will have no impact on the probability or consequences of accidents previously evaluated. The change will allow an alternative to the specified integrated EDG testing. The alternative testing will include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified. The proposed alternative method of operability verification via test is adequate (see Standard Technical Specifications NUREG 1432) when it is not practical to connect loads without expecting hardship or undesired operation during integrated testing. Thus, using an acceptable means of operability verification will have no significant impact on the probability of a nonessential load failing to shed or of an essential load failing to energize from the bus by the EDG.

An analysis was performed to evaluate the loading on the EDG if the nonessential loads i.e., 3AB312, 3AB313 and MD Fire Pump failed to shed. The evaluation determined that if MCC 3AB312 and MCC 3AB313 failed to shed the EDG would experience a load of 4320.5 KW,

slightly below the EDG continuous rating of 4400 KW. If both MCCs and the MD Fire Pump failed to shed the EDG would experience a load of 4476.1 KW which is inclusive of LOCA loads. This is slightly above the continuous rating but below the 4840 KW 2 hour rating. It should be noted that the MD Fire Pump will only run if there a loss of system pressure expected to occur as a result of a fire.

Therefore, the proposed change will not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different type of accident from any accident previously evaluated?

Response: No

The proposed change will not alter operation of the plant or the manner in which it is operated. The change will introduce no new system or design change.

Therefore, the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Will operation of the facility in accordance with this proposed change involve a significant reduction in a margin of safety?

Response: No

The proposed change will continue to preserve the margin of safety associated with TS 3.8.1.1. The alternative testing is adequate and acceptable for determining operability. Thus, the AC electrical power sources will be available as designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System (RCS), and containment design limits are not exceeded.

Therefore, the proposed change will not involve a significant reduction in a margin of safety.

Safety and Significant Hazards Determination

Based on the above safety analysis, it is concluded that: (1) the proposed change does not constitute a significant hazards consideration as defined by 10CFR50.92; and (2) there is a reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (3) this action will not result in a condition which significantly alters the impact of the station on the environment as described in the NRC final environmental statement.

ENVIRONMENTAL CONSEQUENCES

This request involves the use of facility components located within the restricted area, as defined in 10 CFR part 20, and changes a surveillance requirement. Entergy Operations Incorporated, has determined that this request does not involve:

- (1) A significant hazard consideration, as described above;
- (2) A significant change in the types or significant increase in the amounts of any effluents that may be released offsite;
- (3) A significant increase in individual or cumulative occupational radiation exposure.

Accordingly, this request 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 this request.

