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J. G. DEWEASE
SENIOR VICE PRESIDENT
NUCLEAR OPERATIONS

May 4, 1988

W3P88-0079
A4.05
QA

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

SUBJECT: **Waterford 3 SES**
Docket No. 50-382
Technical Specification Change Request NPF-38-79

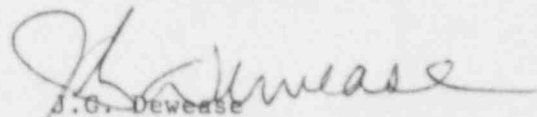
Gentlemen:

Louisiana Power & Light hereby files an application for an amendment to the Waterford 3 Technical Specifications. The amendment would revise Technical Specification Table 3.3-3, "Engineered Safety Features Actuation System Instrumentation". The change would revise Action 17, and add a new Action 18 for the 4.16KV Emergency Bus Undervoltage Relays as discussed with members of your staff.

Since the proposed change is needed to preclude unnecessary shutdowns should one or more of the undervoltage relays become inoperable following plant startup, your timely review of this submittal would be greatly appreciated.

The proposed change does not involve an unreviewed safety question nor a significant hazards consideration. Should you have any questions or require additional information, please contact Larry Laughlin at (504) 595-2845.

Yours very truly,


J.G. Dewease
Senior Vice President -
Nuclear Operations

JGD/LWL/plm

Enclosures: NPF-38-79
Filing Fee - LP&L check \$150.00
Affidavit

cc: E.L. Blake, W.M. Stevenson, J.A. Calvo, D.L. Wigginton, R.D. Martin,
NRC Resident Inspector's Office (W3)

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"EQUAL OPPORTUNITY EMPLOYER"

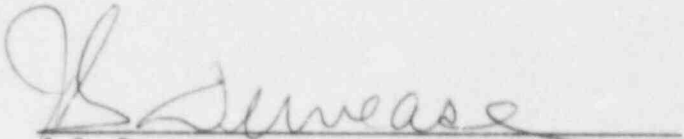
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of)
)
Louisiana Power & Light Company) Docket No. 50-382
Waterford 3 Steam Electric Station)

AFFIDAVIT

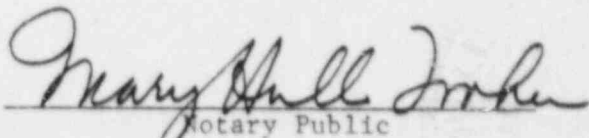
J.G. Dewease, being duly sworn, hereby deposes and says that he is Senior Vice President-Nuclear Operations of Louisiana Power & Light Company; that he is duly authorized to sign and file with the Nuclear Regulatory Commission the attached Technical Specification Change Request NPF-38-79; that he is 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.



J.G. Dewease
Senior Vice President-Nuclear Operations

STATE OF LOUISIANA)
) ss
PARISH OF ORLEANS)

Subscribed and sworn to before me, a Notary Public in and for the Parish and State above named this 5th day of May, 1988.



Notary Public

My Commission expires life.

DESCRIPTION AND SAFETY ANALYSIS
OF PROPOSED CHANGE NPF-38-79

This is a request to revise Technical Specification Table 3.3-3, Engineered Safety Features Actuation System Instrumentation.

Existing Specification

See Attachment A.

Proposed Specification

See Attachment B.

Description

The proposed change would revise Technical Specification Table 3.3-3, Engineered Safety Features Actuation System Instrumentation, as it relates to Loss of Voltage (LOV) on the 4.16KV Emergency Bus Undervoltage Protection (loss of voltage and degraded voltage) and the 480V Emergency Bus Undervoltage Circuit (loss of voltage). Should one of the three relays for the above buses become inoperable, the Technical Specifications, as presently written, require that the relay be placed in the tripped condition within one hour or be restored to service within 48 hours (Action 17 and Action 12). The proposed change would revise Action 17 such that after 48 hours, the associated Emergency Diesel Generator (EDG) would be declared inoperable and require compliance with Specification 3.8.1.1, "AC Sources." (Action 12 will no longer apply for this portion of the Tech Spec.) In addition, Action 18 would be added for conditions in which more than one relay is inoperable. The change would also waive the surveillance requirements of Table 4.3-2, Engineered Safety Features Actuation System Instrumentation Surveillance Requirements, for the two operable relays while complying with Action 17.

Background

The direct current (DC) relays (27-1X, 27-2X, 27-3X) are designed to send an emergency start signal to the 'B' Emergency Diesel Generator (EDG) upon an undervoltage condition in the 3B3-S 4160V bus. Power is supplied to the undervoltage protection circuitry by a 4160/120VAC potential transformer via relays 27-1/B3, 27-2/B3, and 27-3/B3. On March 21, 1988 a maintenance technician inadvertently shorted two wires, blowing the phase A fuse for the primary winding of a 4160/120VAC potential transformer. The blown fuse caused two of the three undervoltage relays, 27-2/B3 and 27-3/B3, and two of the three degraded voltage relays, 27-2E/B3 and 27-3E/B3, to drop out (see LER-88-005, which also includes diagrams of the appropriate circuitry). The respective contacts for the relays closed, providing 125VDC power to the 27-2X and 27-3X relays. This event essentially energized two out of the three relays needed to start the B EDG on bus undervoltage or degraded voltage.

This event identified three unforeseen problems.

1. Technical Specification 3.3.2 Action 17 allows continued operation in modes one, two, or three with one inoperable undervoltage channel provided the channel is placed in the trip condition within one hour. The Tech Specs make no reference to conditions in which more than one relay is inoperable. Although two of the DC relays were energized by this event, it was not clear at the time of the event whether the relays were operable. Later evaluations determined that they were operable; however, this event pointed out a potential Tech Spec problem.
2. Action 12 of Tech Spec 3.3.2 allows operation with one relay in the trip condition for 48 hours. Tech Spec Table 4.3-2 requires a Channel Functional Test on the relays daily. However, due to circuitry design, should one or more DC relays become inoperable, the surveillance cannot be performed on the operable relay(s) using the test circuitry. Therefore, should a failure of one relay occur, operation cannot continue for the full 48 hours (Actions 12 and 17) since the remaining relays cannot be tested and will also be declared inoperable when the next daily surveillance test is overdue.
3. System design is such that all three Tech Spec relays must be removed from service in order to replace the blown fuse. Since this configuration is not addressed in the present Tech Specs, and absent short-term Tech Spec relief, Waterford must enter Tech Spec 3.0.3 while correcting the problem. Waterford entered Tech Spec 3.0.3 at 1345 hours on March 21, 1988 while replacing the blown fuse. The relays were returned to service in approximately six minutes.

Technical Specification 3.0.3 is reserved for conditions which are outside of the plant design basis. However, the requirement to enter 3.0.3 in this particular case clearly does not meet this intent. Removing the three relays from service prevents the associated EDG from starting on bus undervoltage. The logical approach in this case would be to declare the affected EDG inoperable and comply with Tech Spec 3.8.1.1. The proposed change, therefore, would address these problems.

It should be noted that design changes may also provide a solution to the problems discussed above. However, implementation of such changes is clearly impractical prior to the next refueling outage. In addition, the complexity of the system is such that a complete design solution is not guaranteed without creating new, and possibly more serious, compliance problems.

Safety Analysis

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

- i. Will the 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 undervoltage circuitry is designed to start the EDGs on bus undervoltage. Failure of the DC relays to perform their intended function (i.e., they become inoperable) would prevent the associated EDG from starting on undervoltage. It is logical, therefore, that the operability of the EDG be related to the operability of the DC relays. The proposed change would revise Action 17 such that the affected EDG would be declared inoperable at the end of the 48 hour period rather than shutting down the plant. Action 18 will be added for those conditions in which the relay in Action 17 cannot be placed in the trip condition within one hour, and for conditions in which more than one DC relay is inoperable. This approach is consistent with plant design and Tech Spec philosophy.

In addition, the proposed change would waive the surveillance requirements for the DC relays specified in Table 4.3-2 while operating within Action 17. Table 4.3-2 requires a daily surveillance on each DC relay and specifies use of the installed test switches which test and reset those relays in a predetermined sequence. Due to system design, however, should one or more of the DC relays fail, periodic testing of the remaining channel(s) using the installed test switch may not be possible. The intent of Action 12 is to allow continued operation for 48 hours while returning the inoperable relay to service. However, the 24 hour surveillance frequency required by Table 4.3-2 would place Waterford 3 in Tech Spec 3.0.3 before the end of the 48 hours allotted in Action 12. This is not consistent with the intent of Action 12. The proposed change would, therefore, waive the surveillance requirements for the 48 hour period stated in Action 17. At most, this change would result in the waiver of two Channel Functional Tests. This would apply only when one relay is placed in the trip condition. Should a problem result in which the operability of more than one DC relay is in question, then this waiver and action statement would not apply. Therefore, the status of the DC relays must be determined prior to deciding whether Action 17 or Action 18 is appropriate. If only one DC relay is inoperable and placed in the trip condition, the waiver of the surveillances for such a short period of time is consistent with the intent of the current Action 12 and thus would not significantly increase the probability or consequences of an accident.

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

Response: No

The proposed changes are consistent with system design and Tech Spec philosophy. No component changes are being made as a result of the proposed change. Since the ability of the EDGs to start on bus undervoltage continues to be assured, the proposed change does not create the possibility of a new or different kind of accident.

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

Response: No

The undervoltage circuitry is designed to start the EDG on bus undervoltage. The proposed change will relate the operability of the DC relays to the operability of the EDGs. The proposed change is consistent with system design and Tech Spec philosophy and, therefore, will preserve the safety function of the EDGs. The request to waive for 48 hours the surveillance requirements while complying with Action 17 will not affect operability of the remaining DC relays and is equivalent to the intent of the present Action 12. Therefore, the proposed change does not involve a significant reduction in safety margin.

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 10 CFR 50.92(c); (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.

ATTACHMENT A