

November 14, 1997

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Garry L. Randolph  
Vice President and  
Chief Nuclear Officer

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Stop P1-137  
Washington, DC 20555-0001

ULNRC-3668

Gentlemen:

**REPLY TO UNRESOLVED ITEM  
INSPECTION REPORT NO. 50-483/97015  
CALLAWAY PLANT**

This responds to Mr. Thomas P. Gwynn's letter dated September 22, 1997, which transmitted an Unresolved Item for events discussed in Inspection Report 50-483/97015. A second example of the Unresolved Item was identified for events discussed in Inspection Report 50-483/97017. Mr. W. D. Johnson's letter dated November 12, 1997, requested that our position on this second example be included with our response to Unresolved Item 50-483/9715-01. As such, our response to the Unresolved Item is presented in Attachment 1. On October 8, 1997, Mr. W. D. Johnson authorized a response due date of November 14, 1997.

None of the material in the response is considered proprietary by Union Electric.

The unresolved items are not nuclear safety issues but are issues regarding the latitude licensees may use to implement Technical Specification requirements. Nevertheless, the resolution of this item may have a substantial adverse effect on the ability to perform maintenance activities and post-repair testing without a plant shutdown. This circumstance could impact thousands of components which can be safely tested at power. It should also be noted that the Callaway Plant Technical Specifications are based on the Standard Technical Specification language. We believe concerns regarding application of "at shutdown" Technical Specification surveillance requirements are therefore generic to the industry.

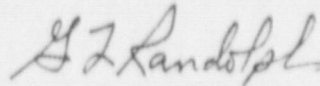
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Due to the generic nature of this Unresolved Item, we are requesting an opportunity be provided to exchange perspectives on this matter, prior to disposition by the NRC Staff. Please contact us at your convenience so the necessary arrangements can be made. If you have any questions regarding this response, or if additional information is required, please let me know.

Very truly yours,



G. L. Randolph  
Vice President and Chief Nuclear Officer

GLF/MAR/tmw

Attachment: 1) Response to Unresolved Item  
Attachment: 2) Applicable Technical Specifications and Bases



cc: Mr. Ellis W. Merscihoff  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region IV  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

Senior Resident Inspector  
Callaway Resident Office  
U.S. Nuclear Regulatory Commission  
8201 NRC Road  
Steedman, MO 65077

Mr. Barry C. Westreich (2 copies)  
Acting Licensing Project Manager, Callaway Plant  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Mail Stop 13E16  
Washington, DC 20555-2738

Manager, Electric Department  
Missouri Public Service Commission  
PO Box 360  
Jefferson City, MO 65102

Mr. Thomas A. Baxter  
Shaw, Pittman, Potts, & Trowbridge  
2300 N. Street N.W.  
Washington, DC 20037

Manager, Plant Support  
Wolf Creek Nuclear Operating Corporation  
PO Box 411  
Burlington, KS 66839

### Statement of Unresolved Item

#### **First Example: NRC Inspection Report 50-483/97-15, Section M1.3**

On September 4, 1997, the Licensee discovered that contacts in the load shed and emergency load shed and emergency load sequencer circuit that inhibit the auto-start signals of certain pumps were not being tested. The affected pumps were the component cooling water, the essential service water, and the motor-driven auxiliary feedwater pumps.

The contacts and associated relays that inhibit the automatic start of the affected pumps were part of the loading logic for the emergency diesel generators. The inhibit function develops in the load shed and emergency load sequencer logic to prevent out-of-sequence loading of the pumps onto the emergency diesel generators.

The Licensee considered the failure to test the inhibit function as a failure to perform certain Technical Specifications surveillances. The Licensee determined that the surveillances were:

- Technical Specification 4.8.1.1.2.g.2)c)2) – verifies that a loss-of-offsite power signal energizes the auto-connected shutdown loads through the shutdown sequencer;
- Technical Specification 4.8.1.2.g.3)d) – verifies on a safety injection signal without loss of offsite power that each emergency diesel generator auto-starts and the offsite power source energizes the auto-connected (accident) loads through the loss-of-coolant-accident sequencer; and
- Technical Specification 4.8.1.1.2.g.4)d) – verifies on a safety injection signal that each emergency diesel generator auto-starts and energizes the emergency busses with permanently connected loads within 12 seconds; and energizes the auto-connected emergency (accident) loads through the loss-of-coolant-accident sequencer.

The shutdown sequencer activates following the detection of undervoltage on the 4160 Volt Class 1E busses. The loss-of-coolant-accident sequencer activates on a safety injection signal.

Technical Specification 4.8.1.1.2.g state that the testing be performed "At least once per 18 months, during shutdown." The Licensee determined that testing of the sequencers could be performed at power without any detrimental effects. Consequently, the Licensee developed a testing plan, wrote a safety evaluation, and issued work authorization documents. The Licensee justified performing the testing at power because:



- Technical Specification 4.8.1.1.2.g applied to testing of the entire load shed and emergency load sequencer system. Testing would only be performed on a small part of the entire load shed and emergency load sequencer system;
- The basis for Technical Specification 4.8.1.1.2.g stated that the restriction on performing the testing while shutdown was due to perturbations to the electrical distribution systems that could challenge continued steady state operation. This specific testing would not lead to perturbations to the electrical distribution systems that could challenge steady state operation; and
- The same testing would be performed with sequencer relays that happened to fail with the reactor at power.

The Licensee entered Technical Specification 4.0.3 for Emergency Diesel Generators A and B at 9:40 a.m. on September 4, 1997. The tests were conducted successfully. The Licensee exited Technical Specification 4.0.3 for Emergency Diesel Generator A at 7:12 p.m. on September 4, 1997. The Licensee exited Technical Specification 4.0.3 for Emergency Diesel Generator B at 8:27 p.m. on September 4, 1997.

Although the tests results were satisfactory, literal compliance with the Technical Specifications may have required that the Licensee perform this testing while shutdown. Since this testing was performed with the reactor at approximately 70 percent power, it is possible that the Technical Specification requirements were not met. Further regulatory analysis of this matter is required; therefore, it will be considered an Unresolved Item pending further review (483/9715-01).

#### **Second Example: NRC Inspection Report 50-483/97-17, Section M8.1**

(Open) Unresolved Item 50-483/9715-01: failure to test load shed and emergency load sequencer inhibit circuits.

NRC Inspection Report 50-483/97-15, Section M1.3, described the Licensee's failure to test several contacts in the load shed and emergency load sequencer circuit that inhibit the auto-start signals of certain pumps. Although subsequent testing demonstrated that the contacts would operate satisfactorily, literal compliance with the Technical Specifications may have required that the testing be performed during shutdown conditions. Since this testing was performed with the reactor at power, there was a potential that Technical Specification requirements were violated.

The inspectors identified a similar Technical Specification compliance issue. The Licensee discovered that contacts on emergency diesel generator bypass protection Relay ESX

were not being adequately tested. As with the inhibit circuit testing, the Licensee identified this problem during Generic Letter 96-01, "Testing of Safety-Related Logic Circuits," reviews.

The inspectors reviewed:

- Final Safety Analysis Report Section 8.3.1.1.3, "Standby Power Supply;
- Generic Letter 96-01, "Testing of Safety-Related Logic Circuits";
- Preventive Maintenance Procedure MPE-ZZ-QY111(QY128), "Operational Test Sequence of 4.16KV Diesel Generator NE01(NE02) Air Circuit Breaker 152NB0111(152NE0211)," Revision 7;
- Suggestion-Solution-Occurrence Report 97-1168;
- Technical Specifications 4.0.3 and 4.8.1.1.2.g.5; and,
- Work Authorization R582371C, "Perform a Complete Trip Check in Accordance with MPE-ZZ-QY111."

On October 16, 1997, the Licensee discovered that contacts on emergency diesel generator bypass protection Relay ESX were not being tested. This relay prevents certain automatic trips of the emergency diesel generators during a safety injection signal or loss of offsite power. The affected trips were:

- Reverse Power
- Loss of Field
- Generator Overcurrent
- Generator Voltage-Restrained Overcurrent
- Generator Ground Overcurrent
- Underfrequency Protection

The Licensee considered the failure to test Relay ESX contacts as a failure to perform Technical Specification Surveillance 4.8.1.1.2.g.5. This surveillance required that the automatic trip bypass feature be tested once per 18 months, during shutdown. The Licensee has been testing this feature every 18 months during shutdown by verifying that Relay ESX energizes and an amber light illuminates when one set of contacts on the relay closes. Although this verifies that the relay coil and one set of the relay's contacts



function properly, it does not verify that all the remaining sets of contacts on Relay ESX can perform the required function.

The Licensee had a separate preventive maintenance test activity, performed every 36 months, that verified that contacts on Relay ESX functioned properly. The preventive maintenance test documents were MPE-ZZ-QY111 and MPE-ZZ-QY128.

The Licensee entered Technical Specification 4.0.3 for Emergency Diesel Generator B at 9:50 a.m. on October 16, 1997. The Licensee successfully performed the required testing using MPE-ZZ-QY128. The Licensee exited Technical Specification 4.0.3 for Emergency Diesel Generator B at 4:54 p.m. on October 16, 1997.

Testing of Relay ESX and associated contacts on Emergency Diesel Generator A, using Procedure MPE-ZZ-QY111, was previously performed on August 6, 1997. The Licensee performed Procedure MPE-ZZ-QY111 as part of a modification test (Modification 95-1021) to install a volts per hertz relay in the Emergency Diesel Generator A control panel.

Although testing of the emergency diesel generators were satisfactory, literal compliance with the Technical Specifications may have required that the Licensee perform the testing while shutdown. Since this testing was performed on both emergency diesel generators with the plant at power, it is possible that the Technical Specification requirement was not met.

The Licensee has agreed to include in the written response for Unresolved Item 50-483/9715-01 their position on testing of Relay ESX and associated contacts with the plant at power. The inspectors will review this issue further pending receipt of the Licensee's written response.

#### UE RESPONSE:

The essence of this issue is whether judgment may be exercised during implementation of Technical Specification requirements.

The NRC has stated that, "Requirements that are duplicative, unnecessary, or unnecessarily burdensome can actually have a negative safety impact. They also can tend to create an inappropriate NRC and Licensee focus on 'safety versus compliance' debates. As the Commission states in its Principles of Good Regulation, 'There should be a clear

nexus between regulations and agency goals and objectives, whether explicitly or implicitly stated'.<sup>1</sup>

The Technical Specification does not explicitly require the LSELS inhibit contacts be tested. The determination that testing of the LSELS inhibit contacts was required was based on several reference source documents, and exercising conservative judgment. Based on a review of the guidance documents referenced in the Bases for Technical Specification 3.8.1.1, UE judged that the intent of the surveillance requirements were to test the function of the LSELS inhibit and ESX bypass protection relay contacts. UE believes this was also consistent with the spirit of the Generic Letter 96-01 reviews which were targeted to identify and correct these types of concerns related to testing of safety related logic circuits. These judgments are conservative and prudent based on the significance of the circuitry.

In order to understand this issue, it is important to provide further background and description of the Technical Specification requirements involved (Attachment 2), the testing prior to discovery of the event, and action taken to resolve the discrepancy.

During reviews required by NRC Generic Letter 95-01 "Testing of Safety-Related Logic Circuits", it was identified that certain Load Shed Emergency Load Sequencer (LSELS) contacts were not in the surveillance program. These contacts serve to:

- 1) Inhibit the non-sequenced start of Component Cooling Water (CCW) and Essential Service Water pumps from automatic start signals generated from sources other than ESFAS.
- 2) Inhibit an Auxiliary Feedwater Actuation Signal (AFAS) from starting the motor driven auxiliary feedwater pumps prior to their LSELS sequencer step.

As noted, the contacts described inhibit non-sequenced starting of pumps from start signals other than those explicitly described by Technical Specification 4.8.1.1.2.g.2.c.2. Therefore, it was uncertain whether the LSELS inhibit contacts were required to be tested under these Surveillance Requirements. Request for Resolution (RFR) 18377A was initiated to evaluate this concern.

Subsequently it was determined, EDG automatic trip bypass upon a simulated safety injection signal (SIS) and loss of off-site power combined test was not in the surveillance program. Relay ESX provides the protection bypass capability. ESX relay function is tested every 18 months during shutdown by verifying proper function of the relay coil and

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<sup>1</sup> NRC Memorandum dated August 25, 1997 to L. Joseph Callan, from John C. Hoyle, Secretary; Subject - Staff Requirements - COMSAJ 97-008 Discussion on Safety and Compliance.



one of the relay's contacts. However, the remaining ESX relay contacts are tested every three years under the Preventive Maintenance program to verify proper operation. It was determined the remaining contacts should be tested on an 18 month frequency during plant shutdown as part of the surveillance requirement.

Performance of Technical Specification Surveillances 4.8.1.1.2.g.2.c.2 and 4.8.1.1.2.g.5 is prohibited in Modes 1 or 2. The Technical Specification Bases for this performance exclusion is, "the performance of certain surveillance requirements during operation with the reactor critical could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems."

This statement was given careful consideration during the evaluation of testing for the LSELS inhibit and ESX bypass protection relay contacts that had not been included in the surveillance program. The evaluation determined surveillance of the LSELS inhibit and ESX bypass protection relay contacts to demonstrate OPERABILITY could be performed without causing any perturbations to the electrical systems. Union Electric's conclusions are consistent with the subsequent conclusions of the Notice of Enforcement Discretion for Wolf Creek Nuclear Operating Corporation (NOED 97-06-13) which stated in part:

"the staff has reviewed the Licensee's request and justification for the issuance of a NOED and agrees that testing of the specific contacts should be conducted to provide assurance that load sequencing will function as designed. The testing proposed to be done at power should not cause any perturbation to the electrical distribution systems that could challenge steady state operation or unit safety systems. This is consistent with NUREG-1600, which states "...enforcement discretion is intended to minimize the potential safety consequences of unnecessary plant transients (shutdown) with the accompanying operational risks and impacts."

On the basis of the staff's evaluation of your request, including the compensatory measures described above, the staff has concluded that the notice of enforcement discretion is warranted. We are clearly satisfied that this ACTION involves minimal or no safety impact and has no adverse impact on public health and safety. Therefore, it is our intention to exercise discretion not to enforce compliance with shutdown requirements of TS Surveillance Requirements 4.8.1.1.2.g.2)c)2, 4.8.1.1.2.g.3)d), and 4.8.1.1.2.g.4)u) and permit one-time testing while the plant is in MODE 1. The evaluation also determined the LSELS inhibit contacts should be included in the scope of the Technical Specification surveillance, even though the Technical Specification scope does not explicitly include the LSELS inhibit contacts."

It was determined that quarterly slave relay testing performed in accordance with procedures OSP-SA-0017A, "Train A SIS-CSAS Slave Relay Test" and OSP-SA-0017B, "Train B SIS-CSAS Slave Relay Test" per Engineered Safety Features Actuation System Instrumentation Surveillance Requirements contained in Technical Specification table 4.3-2 Functional Units 1, "Safety Injection" and 2, "Containment Spray" exercised the LSELS inhibit contacts for the CCW and ESW pump starts, but did not record sufficient data to resolve the surveillance testing concern. The surveillances were performed and additional data was recorded during performance to prove the LSELS inhibit contacts were OPERABLE. Special test procedures were written to test the LSELS inhibit contacts for the Motor Driven AFW pumps. The tests were written and Formal Safety Evaluations were performed in accordance with the requirements of 10 CFR 50.59 to ensure the testing did not constitute an unreviewed safety question.

Similarly, once the conclusion was made that the ESX relay contacts required testing to establish OPERABILITY, plant management declared the 'B' emergency diesel generator inoperable in accordance with Technical Specification 4.0.3 and entered the ACTION Statement for Technical Specification 3.8.1.1. The 'A' emergency diesel generator was considered operable since installation of a modification had resulted in adequate testing to establish OPERABILITY.

In the Statement of Unresolved Item i, it was noted that Technical Specification 4.0.3 was exited upon completion of testing both diesels. While this is true, it is incomplete. Upon completion of testing the A diesel generator, the Technical Specification 4.0.3, 24-hour allowance was exited and Technical Specification 3.8.1.1 ACTION b was entered. This ACTION requires in part to "restore the inoperable diesel generator to OPERABLE status within 72 hours". Compliance with 4.0.3 was restored upon completion of testing the B diesel generator and Technical Specification 3.8.1.1 ACTION b was exited.

For both of these circumstances Technical Specification 4.0.3 and 3/4.8.1 are applicable. The Licensee must perform an evaluation in order to simultaneously meet the intent of both Technical Specifications based on plant conditions. The Technical Specification ACTION Statement clearly requires that OPERABILITY must be established or the plant shut down. The basis for INOPERABILITY is that reliability of equipment has not been established by testing. To establish OPERABILITY reliability of the subject components must be established by testing. Technical Specification 4.0.3 provided for this circumstance. The remaining considerations are whether the testing can be done safely and whether performance "at power" versus "at shutdown", affects test validity. Technical Specification 4.0.3 provides a 24-hour allowance to permit a delay in implementing the ACTION requirements. This provides an adequate time limit to complete surveillance requirements that have not been performed. The purpose of the allowance is to permit the completion of a surveillance before a shutdown is required to comply with ACTION



requirements or before other remedial measures would be required that may preclude completion of a surveillance. The Technical Specification Bases for this allowance includes consideration for plant conditions, adequate planning, availability of personnel, the time required to perform the surveillance, and the safety significance of the delay in completing the surveillance. The foundation for the Bases of Technical Specification 4.0.3 was established by NRC Generic Letter 87-09.

The intent of Technical Specification 4.0.3 is to allow a Licensee to meet Technical Specification surveillance commitments in an orderly manner without causing plant perturbations and plant shutdowns when it is identified that a surveillance commitment has been missed.

The Staff position provided by Generic Letter 87-09 for Problem #2 - Unnecessary Shutdown Caused by Inadvertent Surpassing of Surveillance Intervals (Specification 4.0.3) states,

"It is overly conservative to assume that systems or components are inoperable when a surveillance requirement has not been performed. The opposite is in fact the case; the vast majority of surveillances demonstrate that systems or components in fact are operable. When a surveillance is missed, it is primarily a question of OPERABILITY that has not been verified by the performance of the required surveillance."

The Bases for Technical Specification 4.0.3 do not prohibit the partial performance of surveillance testing requirements at power for surveillances that have an "at shutdown" requirement. It is recognized situations requiring performance of the specific detailed surveillance requirement will have to be performed at shutdown.

A portion of the Bases for the Technical Specification 4.0.3, 24-hour allowance, is to consider plant conditions. Specifically, a determination of whether the test can be performed safely at power must be made, as well as if the required conditions for the test can be established. This evaluation was accomplished using the 10 CFR 50.59 safety evaluation process.

Additional considerations are as follows:

- 10 CFR 50.36 c.2 defines limiting condition for operation(LCO) as the lowest functional capability or performance levels of equipment required for safe operation of the facility. It further states that when an LCO is not met, the Licensee shall shut down the reactor or follow any remedial ACTION permitted.
- 10 CFR 50.36 c.3 defines surveillance requirements as requirements relating to test, calibration, or inspection to assure that necessary quality of systems and components is

maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

- Part 9900 of the NRC Inspection Manual contains guidance under "OPERABLE/OPERABILITY: Ensuring the Functional Capability of a System or Component" to be used when evaluating the condition of a structure, system, or component and its effect on plant operation. Section 4.0 "Background" contains guidance that, "The process of ensuring OPERABILITY is continuous and consists of the verification of OPERABILITY by surveillances and formal determinations of OPERABILITY whenever a verification or other indication calls into questions the system's or component's ability to perform its specified function".

Section 6.1 "Scope and Timing of OPERABILITY Determinations" directs that, "The Licensee should examine the full scope of the current licensing basis, including the Technical Specification and FSAR commitments, to establish the conditions and performance requirements to be met for determining OPERABILITY. The OPERABILITY decision may be based on analysis, a test or partial test, experience with operating events, engineering judgment, or a combination of these factors taking into consideration equipment functional requirements."

Section 6.4 "OPERABILITY During Technical Specification Surveillance and Preventive Maintenance" discusses that "In all cases, care should be exercised in removing equipment from service for PM to avoid accumulating long out-of-service times in safety trains. The Licensee should reestablish OPERABILITY before equipment is returned to service. The Licensee also may need to reestablish OPERABILITY for systems or components, in whole or in part, that are actively dependent upon equipment undergoing the PM activity. The need for testing to reestablish OPERABILITY should be based on a reasonable judgment about how the inoperable equipment may have been affected. If retesting to reestablish OPERABILITY is not possible or practicable because of safety concerns, analysis or other means should be used to demonstrate OPERABILITY."

Section 6.6, "Missed Technical Specification Surveillance" contains guidance that "The Allowed Outage Time (AOT) in the ACTION requirements specifies a time interval that permits corrective ACTION to be taken to satisfy the LCO. If such a time interval is specified in the ACTION requirements or if the Licensee has adopted by amendment, the 24 hour provision of amended Surveillance Requirement 4.0.3 as discussed in Generic Letter 87-09, the completion of a missed surveillance within these time intervals meets the requirements."



Using the above guidance, Union Electric was able to comply with the Technical Specifications Limiting Condition for Operations (LCO) ACTION Statement requirements to establish OPERABILITY for the situations described in the Inspection Reports. Therefore, it was not necessary to pursue a Notice of Enforcement Discretion (NOED). Amendments to the Technical Specifications were not pursued since no changes were required.

**CONCLUSION:**

1. Implementation of Technical Specification Surveillance Requirements requires judgment as to the scope of components to be tested and plant conditions for test performance. Guidance for this determination is provided in Technical Specifications, Bases for Technical Specification, Generic Letters, and other sources. Union Electric utilized all these sources to comply with Technical Specifications. Specifically:
  - Although not specifically detailed in the Surveillance requirements of Technical Specification 4.8.1, the LSELS inhibit and ESX bypass protection relays should be included in the scope of the Technical Specification to satisfy its intent.
  - The Bases for Technical Specification 4.8.1, restricts the allowed Modes for surveillance performance of the on-line surveillance due to the potential for undesirable perturbations to the electrical distribution systems during reactor operations. Evaluations by our staff concluded that OPERABILITY of the LSELS inhibit and ESX bypass protection relay contacts could be established by performance of a partial surveillance without perturbations to the electrical system. This is the same logic that was applied by the NRC for the NOED granted to Wolf Creek.
2. Union Electric entered Technical Specification 4.0.3 when the above situation were encountered. Technical Specification 4.0.3 does not prohibit performance of the surveillance test at power and according to the Bases, the purpose of 4.0.3 is to reference unnecessary plant shutdowns with their attendant risk for missed Technical Specification surveillances. These considerations provide additional bases that Union Electric complied with Technical Specification.
3. Performing these surveillances at power did not impact Nuclear Safety.

Applicable Technical Specifications and their Bases

Technical Specification 3.8.1.1 states, in part:

"3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- b. Two separate and independent diesel generators, each with:
  - 1) A separate day tank containing a minimum volume of 510 gallons of fuel,
  - 2) A separate Fuel Oil Storage System containing a minimum volume of 80,400 gallons of fuel, and,
  - 3) A separate fuel transfer pump.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- b. One Diesel Generator Inoperable:

With one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the offsite A.C. sources by performing Specification 4.8.1.1.1 within 1 hour and at least once per 8 hours thereafter. Demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Specification 4.8.1.1.2a.4) within 24 hours\* and restore the inoperable diesel generator to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. In addition, perform ACTION d."

\* Unless the following conditions are met:

- 1) It can be demonstrated that there is no potential common mode failure for the remaining diesel generator, and
- 2) The diesel generator was declared inoperable due to:
  - a) an inoperable support system, or
  - b) an independently testable component, or
  - c) preplanned preventive maintenance, testing or maintenance to correct a condition which, if left uncorrected, would not affect the OPERABILITY of the diesel generator.



Technical Specification 3.8.1.1.f states:

"f. Two Diesel Generators Inoperable:

With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite A.C. circuits by performing Specification 4.8.1.1.1 within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Following restoration of one diesel generator, follow ACTION b. with the time requirement of the ACTION based on the time of initial loss of the remaining inoperable diesel generator. A successful test of diesel generator OPERABILITY performed in accordance with Specification 4.8.1.1.2a.4) under this ACTION for the OPERABLE diesel generators, satisfies the subsequent testing requirement of Specification 3.8.1.1 ACTION b."

Technical Specification 3.8.1 Bases states, in part:

"3/4.8.1, A.C. Sources

The OPERABILITY of the A.C. and D. C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety-related equipment required for: (1) the safe shutdown of the facility, and (2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D. C. power sources and distribution systems satisfy the requirements of General Design Criterion 17 of Appendix A to 10 CFR Part 50.

The surveillance requirements of Technical Specification 3/4.8.1 are based upon, in part, the guidance of Generic Letter 94-01, "Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators from Plant Technical Specifications," Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," Regulatory Guide 1.9, "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electrical Power Systems at Nuclear Power Plants," Revision 3, and NUREG-1431, "Standard Technical Specifications - Westinghouse Plants." Also, the guidance of NUMARC 87-00, "Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors," Revision 1, and Regulatory guide 1.160 has been

adopted to formulate a comprehensive Emergency Diesel Generator Reliability Program.

The note that will not allow a surveillance requirement to be performed in MODES 1 or 2 is based on the improved Standard Technical Specifications (NUREG-1431) which recognizes that the performance of certain surveillance requirements during operation with the reactor critical could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems."

The Technical Specification surveillance requirements for A.C. Sources of Electrical Power state, in part:

"4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE:

- g. At least once per 18 months, during shutdown, by:
  - 2) Verifying on an actual or simulated loss-of-offsite power signal\*:
    - c) The diesel generator auto-starts from standby conditions\*\* and:
      - 2) energizes the auto-connected shutdown loads through the shutdown sequencer,
  - 3) Verifying on an actual or simulated Safety Injection Signal (SIS)\* without loss-of-offsite power that each diesel generator auto-starts from the standby condition\*\* and:
    - d) the offsite power source energizes the auto-connected (accident) loads through the LOCA sequencer.
  - 4) Verifying on a simulated loss-of-offsite power in conjunction with a simulated SIS\* that each of diesel generator auto-starts from standby condition\*\* and:
    - d) energizes the emergency busses with permanently connected loads within 12 seconds, energizes the auto-connected emergency (accident) loads through the LOCA sequencer;"



- 5) Verifying each diesel generator's automatic trips are bypassed upon the simulated SIS and loss-of-offsite power combined test \*\*\* except:
- a) High jacket coolant temperature;
  - b) Engine Overspeed;
  - c) Low lube oil pressure;
  - d) High crankcase pressure;
  - e) Start failure relay;
  - f) Generator differential current.

\* This surveillance shall not be performed in Modes 1 or 2 and credit may be taken for unplanned events that satisfy this requirement.

\*\* This test shall be preceded by an engine prelube period and/or other warm-up procedures recommended by the manufacture so that the mechanical stress and wear on the diesel engine is minimized.

\*\*\* This surveillance shall not be performed in Modes 1 or 2 and credit may be taken for unplanned events that satisfy this requirement.

Technical Specification 4.0.3 states:

"4.0.3 Failure to perform a Surveillance Requirement within the allowed surveillance interval, defined by Specification 4.0.2, shall constitute noncompliance with the OPERABILITY requirements for a Limiting Condition for Operation. The allowable outage time limits of the ACTION requirements are applicable at the time it is identified that a Surveillance Requirement has not been performed. The ACTION requirements may be delayed for up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the ACTION requirements are less than 24 hours. Surveillance Requirements do not have to be performed on inoperable equipment."

Technical Specification 4.0.3 Bases states:

"4.0.3 This specification establishes the failure to perform a Surveillance Requirement within the allowed surveillance interval, defined by the provisions of Specification 4.0.2, as a condition that constitutes a failure to meet the OPERABILITY requirements for a Limiting Conditions for Operation. Under the provisions of this specification, systems and components are assumed to be OPERABLE when Surveillance Requirements have been satisfactorily performed within the allowed surveillance interval. However, nothing in this provision is to be construed as implying that systems or components are OPERABLE when they are found or known to be inoperable although still meeting the Surveillance Requirements. This specification also clarifies that the ACTION requirements are applicable when Surveillance Requirements have not been completed within the allowed

surveillance interval and that the time limits of the ACTION requirements apply from the point in time it is identified that a surveillance has not been performed and not at the time that the allowed surveillance interval was exceeded. Completion of the Surveillance Requirement within the allowable outage time limits of the ACTION requirements restores compliance with the requirements of Specification 4.0.3. However, this does not negate the fact that the failure to have performed the surveillance within the allowed surveillance interval, defined by the provisions of Specification 4.0.2, was a violation of the OPERABILITY requirements of a Limiting Condition for Operation.

If the allowable outage time limits of the ACTION requirements are less than 24 hours or a shutdown is required to comply with ACTION requirements, e.g., Specification 3.0.3, a 24-hour allowance is provided to permit a delay in implementing the ACTION requirements. This provides an adequate time limit to complete Surveillance Requirements that have not been performed. The purpose of this allowance is to permit the completion of a surveillance before a shutdown is required to comply with ACTION requirements or before other remedial measures would be required that may preclude completion of a surveillance. The basis for this allowance includes consideration for plant conditions, adequate planning, availability of personnel, the time required to perform the surveillance, and the safety significance of the delay in completing the required surveillance. If a surveillance is not completed within the 24-hour allowance, the allowable outage time limits of the ACTION requirements are applicable at that time. When a surveillance is performed within the 24-hour allowance and the Surveillance Requirements are not met, the time limits of the ACTION requirements are applicable at the time the surveillance is terminated. Surveillance Requirements do not have to be performed on inoperable equipment, because the ACTION requirements define the remedial measures that apply. However, the Surveillance Requirements have to be met to demonstrate that inoperable equipment has been restored to OPERABLE status."



Attachment 2 to  
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bcc: J. V. Laux  
W. B. Bobnar  
A. C. Passwater/D. E. Shafer (470)  
NSRB (G. A. Hughes/P. L. Reynolds) (470)  
M. P. Barrett (100)  
S. G. Wideman (WCNOC)  
H. D. Bono  
M. A. Reidmeyer  
GLR Chrono  
Bulletin Board Posting (13 copies)  
A170.0103 (97015) (QA Record) (CA-460)  
A170.0103 (97015 - QA Department Copy) (CA-450)  
A160.0761  
E210.0001