

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) McGuire Nuclear Station, Unit 1	DOCKET NUMBER (2) 050003619	PAGE (3) 1 OF 06
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TITLE (4) The Tech Spec Surveillance Requirement was not Possible Because the Tech Spec was Incorrectly Written.

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
07	15	88	88	018		09	01	88	Unit 2	050003710
										050003

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)				
POWER LEVEL (10) 11010	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(e)	<input type="checkbox"/> 80.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	<input type="checkbox"/> 20.405(a)(1)(D)	<input type="checkbox"/> 80.38(a)(1)	<input type="checkbox"/> 80.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)	
	<input type="checkbox"/> 20.405(a)(1)(E)	<input type="checkbox"/> 80.38(a)(2)	<input type="checkbox"/> 80.73(a)(2)(vi)		
	<input type="checkbox"/> 20.405(a)(1)(F)	<input checked="" type="checkbox"/> 80.73(a)(2)(i)	<input type="checkbox"/> 80.77(a)(2)(viii)(A)		
	<input type="checkbox"/> 20.405(a)(1)(G)	<input type="checkbox"/> 80.73(a)(2)(ii)	<input type="checkbox"/> 80.73(a)(2)(vii)(B)		
	<input type="checkbox"/> 20.405(a)(1)(H)	<input type="checkbox"/> 80.73(a)(2)(iii)	<input type="checkbox"/> 80.73(a)(2)(ix)		

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME Steven E. LeRoy, Licensing	AREA CODE 7104	373	-612313

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO			

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On 07/15/88, Performance determined during testing that it was not possible to demonstrate compliance with Tech Spec (TS) 4.8.1.1.2.e.6)c). This surveillance required each Diesel Generator (DG) to be demonstrated operable. This TS also required that all DG breaker trips, except generator time overcurrent, be verified to be automatically bypassed upon loss of voltage on the emergency bus concurrent with a Safety Injection Actuation signal. The intent of the TS was to verify that non-essential DG trips are bypassed during an emergency start and not to verify proper functioning of the DG breaker trips. It was not possible to demonstrate compliance with the TS as written because there are additional DG trips and DG breaker trips not automatically bypassed by design. As a result, Compliance informed NRC Region II and Office of Nuclear Reactor Regulation that it was not possible to demonstrate compliance with the TS as written, and requested a waiver of compliance. Compliance personnel included in this request a proposed TS change. NRC approved the proposed change on 07/15/88 and concluded that the DGs were operable since DG periodic testing had been consistent with design. This event is assigned a cause of other, because no other cause code specifically applies to this event based on the information available.

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TEXT: If more space is required, use additional NRC Form 365A (1) (17)

INTRODUCTION:

On July 15, 1988, Performance personnel determined during testing that it was not possible to demonstrate compliance with Technical Specification (TS) 4.8.1.1.2.e.6)c). This surveillance required each Diesel Generator (DG) to be demonstrated operable, in part, by periodically verifying that all automatic DG trips, except engine overspeed, lube oil pressure, and generator differential, are automatically bypassed upon loss of voltage on the emergency bus concurrent with a Safety Injection Actuation signal. This TS also required that all DG breaker trips, except generator time overcurrent, be verified to be automatically bypassed upon loss of voltage on the emergency bus concurrent with a Safety Injection Actuation signal.

The DG trips, which apply to the DG starting logic, should be distinguished from the DG breaker trips, which apply to the DG switchgear bus. The intent of the TS was to verify that non-essential DG trips are bypassed during an emergency start and not to verify proper functioning of the DG breaker trips. Specifically, the purpose of the TS was to verify that all automatic DG trips, except engine overspeed, lube oil pressure, generator differential, and generator time overcurrent are automatically bypassed. It was not possible to demonstrate compliance with the TS as written because there are additional DG trips and DG breaker trips not automatically bypassed by design. (For example, the DG breaker is provided with a generator differential trip that is not automatically bypassed.)

As a result, on July 15, 1988, Compliance personnel informed NRC Region II personnel and Office of Nuclear Reactor Regulation personnel that it was not possible to demonstrate compliance with the TS as written, and requested a waiver of compliance to avoid all DGs being declared inoperable. Compliance personnel included in this request a proposed TS change in which the generator time overcurrent trip was included as a fourth DG trip which is not automatically bypassed, and in which the second part of the TS pertaining to the DG breaker trips was deleted. NRC personnel approved the proposed change on July 15, 1988, and concluded with Compliance personnel that the DGs were operable since DG periodic testing had been consistent with design. On July 22, 1988, the NRC issued License Amendments 90 and 71 for Units 1 and 2, respectively, approving the proposed changes to the subject TS. The License Amendments were effective as of July 15, 1988.

Unit 1 was in Mode 1 (Power Operation) at 100% power, and Unit 2 was in Mode 5 (Cold Shutdown) at the time that the TS problem was discovered.

This event is assigned a cause of Other, because no other Cause Code specifically applies to this event based on the information available.

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TEXT (if more space is required, use additional NRC Form 368A's) (17)

Background

Two on site DGs [EIIS:DG] per unit are provided to supply AC power required for safe shutdown in the event that normal system power becomes unavailable. Each DG is provided with ten protective trips. Six of these trips protect the DG during testing periods but are bypassed in the event of an accident condition. The risk of damage to the DG as a result of any of these six signals being present is considered subordinate to continued DG operation to mitigate the emergency. An additional DG trip in this category, Generator Instantaneous Overcurrent Protection, is listed in the McGuire Final Safety Analysis Report, but has not been and may not be installed. The remaining four DG trips protect the DG at all times and are not bypassed during startup of the DG by an Engineered Safety Features [EIIS:JE] signal. These DG trips are:

1. Low Lube Oil Pressure
2. Engine Overspeed
3. Generator Differential Protection
4. Generator Time Overcurrent

Operation of the DG under any of these conditions could result in significant damage to the DG. Of particular concern in this event is the generator time overcurrent trip. This trip is not automatically bypassed because operation of the DG with a multiphase fault on the switchgear bus would quickly result in destruction of the generator. Because the generator cannot maintain bus voltage under these conditions, and because redundant DGs are available, there is no justification for operation of the DG under these conditions. Three separate measurements of overcurrent are provided, and specific coincident logic is required to initiate a DG trip.

Description of Event

On July 14, 1988, Operations (OPS) personnel discovered that the procedures used by Performance (PRF) personnel to demonstrate compliance with TS 4.8.1.1.2.e.6)c) did not result in the DGs being tested exactly as required. These procedures did not require testing of the generator time overcurrent trip as required in the TS. Compliance (CMP) personnel informed the NRC of this noncompliance in the morning of July 15, 1988. As required, both units entered TS 4.0.3 (failure to perform a Surveillance Requirement) at 1216, allowing PRF personnel 24 hours to demonstrate compliance with the TS. However, PRF personnel determined at approximately 1500 that it was not possible to perform the surveillance requirement as written because the TS was inconsistent with design.

In the evening of July 15, 1988, CMP personnel requested a waiver of compliance from NRC personnel in which it was explained what was wrong with the TS and

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what corrections needed to be made. It was also explained that previous surveillance tests had demonstrated that the DGs were operable. CMP personnel requested these corrections on an emergency basis to avoid all DGs being declared inoperable. NRC personnel agreed that the time overcurrent trip should be included as a fourth DG trip that is not automatically bypassed, and that the second part of the TS, in which the DG breakers are required to be tested, should be deleted. Also, the NRC recognized that the DGs were operable and granted the temporary waiver of compliance while the TS change was being processed. At 1750, Units 1 and 2 were taken out of FS 4.0.3 as a result of the waiver of compliance.

Licensing personnel submitted, by letter dated July 19, 1988, the proposed TS change with a justification and Safety Analysis for the change, and subsequently provided additional information in support of the amendment by letter dated July 21, 1988. The NRC confirmed the waiver of compliance by letter dated July 20, 1988, and subsequently issued License Amendments 90 and 71 for Units 1 and 2, respectively, incorporating the corrections to the subject TS. These amendments were effective as of July 15, 1988.

Conclusion

This event inadvertently occurred despite multiple reviews of TS 4.8.1.1.2.e.6)c) (formerly 4.8.1.1.2.e.7)c)) by both Duke Power personnel and NRC personnel since the initial proposed revision was submitted in August 1984 as a result of the addition of the time overcurrent trip protection. It is noted that prior to this addition, the TS was correct because it required verification of proper functioning of the existing DG trips and did not require testing of the DG breaker trips. The initial revision required verification that all automatic DG trips and DG breaker trips, except engine overspeed, lube oil pressure, generator differential, and generator time overcurrent, are automatically bypassed. The DG breaker trips should not have been included with the DG trips because the engine overspeed and the lube oil pressure signals do not apply to the DG breaker trips. In response to an NRC request for clarification, Duke Power personnel submitted a TS change in October 1984. This TS required verification that all automatic DG trips, except engine overspeed, lube oil pressure, and generator differential, and all DG breaker trips, except generator time overcurrent, are automatically bypassed. The revised TS was still incorrect since there are additional DG and DG breaker trips that are not automatically bypassed. A subsequent revision to this TS in February 1985 resulted in editorial changes which were made to clarify the requirement. Despite multiple reviews, the TS was still incorrect. PRF personnel and the DG test procedures for consistency with these revisions; however, the procedures were not changed because PRF personnel realized that the procedures were consistent with the intent of the TS and the DG design.

Because the DG test procedures were consistent with design, the DGs had been demonstrated operable prior to and after the addition of the time overcurrent trip. The Diesel Generator Periodic Test Procedures, PT/1,2/A/4350/15A,15B, require verification that the engine overspeed, low lube oil pressure, and generator differential trips are not automatically bypassed in emergency conditions, but do not explicitly require verification that the generator time

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overcurrent trip is not automatically bypassed. However, the generator time overcurrent signal and the generator differential signal feed a common relay; therefore, by checking proper operation of the generator differential trip, the generator time overcurrent trip is also checked. Consequently, the test results had verified the correct operation of all DG trips.

In the corrected TS, the generator time overcurrent trip is simply included as a fourth DG trip that is not automatically bypassed. Also, no verification of whether or not the DG breaker trips are bypassed is required. These changes are consistent with the intent of the TS, which is verification of proper functioning of all automatic DG trips. Verification of proper functioning of the DG breaker trips is beyond the requirements of the Standard Technical Specifications (NUREG - 0452, Revision 4). Therefore, including the generator time overcurrent trip as a non-bypassed DG trip and deleting the requirement related to the DG breaker trips is appropriate.

This event is assigned a cause of Other, because no other Cause Code specifically applies to this event based on the information available. Duke personnel initiated the August 1984 TS change as a result of the addition of the time overcurrent trip and followed through with the proper actions to implement this change. However, Duke personnel evidently failed to correctly distinguish the DG trips from the DG breaker trips. The root cause may have been a Personnel Error because of deficient communication or a lack of attention to detail, or because of a Management Deficiency from inadequate surveillance or review of the TS change. Because of the large number of individuals involved in the initiation and review of the TS change, and because the TS change was initiated approximately four years prior to the date of this report, a specific Cause Code cannot be assigned with certainty.

Quality Assurance personnel identified two additional TSs that were inconsistent with design in June 1987. Surveillance requirements 4.4.3.3 and 4.4.4.3 require verification of the operability of the emergency power supplies for the Pressurizer heaters, power operated relief valves (PORVs), and the PORV block valves by manually transferring power from normal to emergency and verifying that these components function correctly. This requirement is not appropriate because each of these components is permanently connected to an emergency power source, in this case, the 600 volt AC Essential Auxiliary Power System. Licensing personnel requested deletion of these surveillance requirements by letter to the NRC dated June 24, 1988, and provided a justification and Safety Analysis in support of this change. This proposal was submitted as part of a package of proposed TS changes and was not requested on an emergency basis.

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The TS Improvement Program is a proposed program to reduce the volume of the TSs, to modify the TSs for human factors, and to provide better bases for the TSs. A thorough review of the TSs will be required when making these changes; consequently, any TSs having discrepancies with design should be identified and corrected. Although the TS Improvement Program is currently scheduled on the Master Work Plan, no firm commitment exists to implement the program. However, Licensing personnel are currently comparing the existing TSs against a draft copy of the Westinghouse Topical Report which would take the place of the Standard Technical Specifications. This comparison, scheduled for completion in March 1989, should be helpful in identifying incorrect TSs. If the TS Improvement Program is approved, it should be completed in late 1989.

A review of past License Event Reports (LERs) revealed numerous events involving TS violations. Five of these events were assigned a cause of other because of Personnel Errors or Management Deficiencies. The corrective actions were specific to these events and would not have prevented this event from occurring.

This event is not reportable to the Nuclear Plant Reliability Data System (NPRDS).

CORRECTIVE ACTIONS:

- Immediate: Units 1 and 2 entered Tr 4.0.3 from 1216 until 1750 on July 15, 1988.
- Subsequent: TS 4.8.1.1.2.e.6)c) was changed to include the generator time overcurrent trip as a DG trip which is not automatically bypassed, and the requirement to verify proper functioning of the DG breaker trips was deleted.
- Planned: PRF personnel will change the DG Test Procedures, PT/1,2/A/4350/15A,15B, to explicitly require verification that the generator time overcurrent trip is not automatically bypassed upon loss of voltage on the emergency bus concurrent with a Safety Injection Actuation signal.

SAFETY ANALYSIS:

Periodic tests that have been performed prior to and after the generator time overcurrent trip was added have demonstrated the correct functioning of all DG trips. Verification that the generator differential trip is not automatically bypassed assures that the generator time overcurrent trip is also not automatically bypassed. Therefore, this testing assured that the automatic DG trips were operable and would have functioned as intended.

There were no personnel injuries, radiation overexposures, or releases of radioactive material as a result of this event. This event is considered to be of no significance with respect to the health and safety of the public.

Duke Power Company
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DUKE POWER

September 1, 1988

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

Subject: McGuire Nuclear Station
Docket No. 50-369
Licensee Event Report 369/88-18

Gentlemen:

Pursuant to 10CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 369/88-18 concerning a technical specification surveillance requirement that was not possible to fulfill because the technical specification was incorrectly written. This report is being submitted in accordance with 10CFR 50.73(a)(2)(i)(B). This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

A handwritten signature in cursive script that reads "Hal B. Tucker".

Hal B. Tucker

SEL/322/mmf

Attachment

cc: Dr. J. Nelson Grace
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