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**DUKE POWER**

July 15, 1988

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

Subject: McGuire Nuclear Station  
Units 1 and 2  
Dockette Nos. 50-369 and 50-370

Dear Sir,

In the course of reviewing procedures for diesel generator surveillance, it was determined that surveillance procedures for the diesel generators were in non-compliance with McGuire Technical Specification 4.8.1.1.2.e.6(c). Further review of the situation determined that appropriate surveillances had been done to verify the correct operation of the diesel generator trips as intended by the above referenced Technical Specification. Therefore the diesels are considered to be operable, even though literal compliance with the Technical Specification cannot be achieved.

On February 1, 1985, the NRC issued Amendments 38 and 19 for McGuire Units 1 and 2 respectively. The intended purpose of these amendments was to reflect the installation of an additional diesel generator trip function. In the safety evaluation that accompanied the license Amendment, the NRC agreed that the addition of a generator time overcurrent trip was justified. The intended change was to add the generator time overcurrent as a fourth diesel generator trip (in addition to engine overspeed, low lube oil pressure, and generator differential) to the list of trips not bypassed on a loss of voltage on the emergency buss concurrent with a safety injection actuation signal.

As requested and approved, the generator time overcurrent was added as a diesel generator breaker trip rather than a diesel generator trip. The actuation of the generator time overcurrent relay actually trips both the diesel generator and the diesel generator breaker. As a result, it is not possible to demonstrate literal compliance with the current Technical Specification which requires that all but three diesel generator trips are bypassed when in fact there are four. The current specification also requires that

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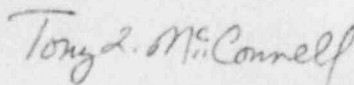
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in addition we verify all generator breaker trips except one are bypassed when in fact two trips (generator time overcurrent and generator differential) exist which are not bypassed. Editorial changes were later made to this specification by Amendment 71/52. A copy of this current specification is attached.

A similar modification was made to McGuire's sister plant, Catawba in about the same time frame to add the additional protective trip. A copy of Catawba's Technical Specification 4.8.1.1.2.g.6(c) is attached. The additional diesel generator trip noted as the "2 out of 3 voltage controlled overcurrent relay scheme" is the same as the "generator time overcurrent" trip noted in the McGuire specification.

Testing of generator breaker trips does not appear in standard Technical Specification surveillances, and therefore should not have been included in the McGuire diesel generator surveillance requirements. Surveillance tests that have been performed since the February 1985 license amendment have demonstrated the correct functioning of all diesel generator trips. This testing has demonstrated that the diesel generator protective trips would function as intended, therefore, the diesel generators are considered operable.

Duke Power Company hereby requests a Waiver of Compliance from the literal wording of McGuire Nuclear Station Technical Specification 4.8.1.1.2.e.6(c) until such time as a formal license amendment request can be prepared, submitted and approved. Attached is the anticipated revision to the Technical Specification. A submittal will be made no later July 19, 1988.



T.L. McConnell, Manager  
McGuire Nuclear Station

## ELECTRICAL POWER SYSTEMS


### SURVEILLANCE REQUIREMENTS (Continued)

- 5) Verifying that on an ESF actuation test signal, without loss-of-offsite power, the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be at least 4160 volts and 57 Hz within 11 seconds after the auto-start signal; the steady-state generator voltage and frequency shall be maintained within  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz during this test;
- 6) Verifying that on a simulated loss of the diesel generator, with offsite power not available, the loads are shed from the emergency busses and that subsequent loading of the diesel generator is in accordance with design requirements;
- 7) Simulating a loss-of-offsite power in conjunction with an ESF 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 11 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz during this test; and
  - c) Verifying that all automatic diesel generator trips, except engine overspeed, lube oil pressure, and generator differential, and all diesel generator breaker trips, except generator time overcurrent, are automatically bypassed upon loss of voltage on the emergency bus concurrent with a Safety Injection Actuation signal.
- 8) Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to greater than or equal to 4400 kW and during the remaining 22 hours of this test, the diesel generator shall be loaded to greater than or equal to 4000 kW. The generator voltage and frequency shall be at least 4160 volts and 57 Hz within 11 seconds after the start signal. The steady-state generator voltage and frequency shall be maintained within  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz during this test. Within 5 minutes after completing this 24-hour test, perform Specification 4.8.1.1.2d.7)b);

ELECTRICAL POWER SYSTEMS


SURVEILLANCE REQUIREMENTS (Continued)

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- 5) Verifying that on an ESF actuation test signal, without loss-of-offsite power, the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be at least 4160 volts and 57 Hz within 11 seconds after the auto-start signal; the steady-state generator voltage and frequency shall be maintained within  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz during this test;
- 6) Simulating a loss-of-offsite power in conjunction with an ESF 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 11 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz during this test; and
  -  c) Verifying that all automatic diesel generator 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. Additionally, all diesel generator breaker trips, except generator time overcurrent, are verified to be automatically bypassed upon concurrent loss of voltage on the emergency bus and a Safety Injection Actuation signal.
- 7) Operating for one hour at 4000 kW to achieve temperature stability. Within 5 minutes, restart and perform Surveillance Requirement 4.8.1.1.2e.6b).
- 8) Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to greater than or equal to 4400 kW and during the remaining 22 hours of this test, the diesel generator shall be loaded to greater than or equal to 4000 kW. The generator voltage and frequency shall be at least 4160 volts and 57 Hz within 11 seconds after the start signal. The steady-state generator voltage and frequency shall be maintained within  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz during this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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- b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 11 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz during this test; \*\* and
  - c) Verifying that all automatic diesel generator trips, except engine overspeed, low-low lube oil pressure, generator differential, and the 2 out of 3 voltage controlled overcurrent relay scheme, are automatically bypassed upon loss of voltage on the emergency bus concurrent with a Safety Injection Actuation signal.
- 7) Verifying, during shutdown, the diesel generator operates for at least 24 hours. The diesel generator shall be loaded to greater than or equal to 5600 kW but less than or equal to 5750 kW. The generator voltage and frequency shall be  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz within 11 seconds after the start signal; the steady-state generator voltage and frequency shall be maintained within these limits during this test. Within 5 minutes after completing this 24-hour test, perform Specification 4.8.1.1.2g.6)b); \* \*\*
  - 8) Verifying, during shutdown, that the auto-connected loads to each diesel generator do not exceed 5750 kW; \*\*
  - 9) Verifying, during shutdown, the diesel generator's capability to: \*\*
    - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
    - b) Transfer its loads to the offsite power source, and
    - c) Be restored to its standby status.
  - 10) Verifying, during shutdown, that with the diesel generator operating in a test mode, connected to its bus, a simulated Safety Injection signal overrides the test mode by: (1) returning the diesel generator to standby operation, and (2) automatically energizing the emergency loads with offsite power; \*\*

\*If Specification 4.8.1.1.2g.6)b) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at greater than or equal to 5600 kW but less than or equal to 5750 kW for 1 hour or until operating temperature has stabilized.

\*\*This surveillance need not be performed until prior to entering HOT SHUTDOWN following the Unit 1 first refueling.

# ANTICIPATED CHANGE

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

- 5) Verifying that on an ESF actuation test signal, without loss-of-offsite power, the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be at least 4160 volts and 57 Hz within 11 seconds after the auto-start signal; the steady-state generator voltage and frequency shall be maintained within  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz during this test;
- 6) Simulating a loss-of-offsite power in conjunction with an ESF 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 11 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz during this test; and
  - c) Verifying that all automatic diesel generator 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. ~~Additionally, all diesel generator breaker trips, except (generator time overcurrent), are verified to be automatically bypassed upon concurrent loss of voltage on the emergency bus and a Safety Injection Actuation signal.~~
- 7) Operating for one hour at 4000 kW to achieve temperature stability. Within 5 minutes, restart and perform Surveillance Requirement 4.8.1.1.2e.6b).
- 8) Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to greater than or equal to 4400 kW and during the remaining 22 hours of this test, the diesel generator shall be loaded to greater than or equal to 4000 kW. The generator voltage and frequency shall be at least 4160 volts and 57 Hz within 11 seconds after the start signal. The steady-state generator voltage and frequency shall be maintained within  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz during this test.