Duke Power®
A Duke Energy Company

GARY R. PETERSON
Vice President
McGuire Nuclear Station

Duke Power
MG01VP / 12700 Hagers Ferry Rd.
Huntersville, NC 28078-9340

704 875 5333
704 875 4809 fax
grpeters@duke-energy.com

April 4, 2007

U. S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555-0001

Subject: Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC

McGuire Nuclear Station, Units 1 and 2
Docket Nos. 50-369, 50-370

Catawba Nuclear Station, Units 1 and 2
Docket Nos. 50-413, 50-414

Response to a Request for Additional Information (RAI) concerning the June 5, 2006 License Amendment Request (LAR) Applicable to Technical Specification (TS) 3.8.1, "AC Sources-Operating," Surveillance Requirement (SR) 3.8.1.13, (TAC NOS. MD3217, MD3218, MD3219, and MD3220)

On January 30, 2007 a conference call was held between the Office of Nuclear Reactor Regulation Project Manager, the reviewers, and Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC (Duke) to discuss the license amendment request submitted June 5, 2006. This LAR clarifies SR 3.8.1.13 and the associated Bases to state that the SR only verifies that non-emergency diesel generator (DG) trips are bypassed. It is based upon, and consistent with, Industry Technical Specification Task Force (TSTF), Standard Technical Specification Traveler, TSTF-400-A, Revision 1, "Clarify SR on Bypass of DG Automatic Trips." After the discussion, Duke agreed to submit the details of periodic maintenance testing for the diesel generator critical automatic trips at both sites.

Attachments 1A and 1B contain the responses to the RAI for Catawba and McGuire, respectively.

Duke also agrees to request the addition of the statement: "Currently, DG emergency automatic trips are tested periodically per the station periodic maintenance program." to the end of the first paragraph of the revised TS Bases SR 3.8.1.13 for Catawba and McGuire. The preceding statement is the only commitment in this letter.

A001

If any questions arise or additional information is needed, please contact Ken Ashe at (704) 875-4535 or Tony Jackson at (803) 831-3742.

Very truly yours,

Gary R. Peterson

Attachments

xc: w/attachments

W. D. Travers, Region II Administrator
U.S. Nuclear Regulatory Commission
Sam Nunn Atlanta Federal Center, 23 T85
61 Forsyth St., SW
Atlanta, GA 30303-8931

J. F. Stang, Jr., Senior Project Manager (CNS & MNS)
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Mail Stop 0-8 H 4A
Rockville, MD 20852-2738

A. T. Sabisch
Senior Resident Inspector
U. S. Nuclear Regulatory Commission
Catawba Nuclear Station

J. B. Brady
Senior Resident Inspector
U. S. Nuclear Regulatory Commission
McGuire Nuclear Station

Beverly O. Hall, Section Chief
Radiation Protection Section
1645 Mail Service Center
Raleigh, NC 27699-1645

H. J. Porter, Assistant Director
Division of Radioactive Waste Management
Bureau of Land and Waste Management
Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Gary R. Peterson affirms that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth herein are true and correct to the best of his knowledge.

Gary R. Peterson
Vice President

Subscribed and sworn to me: April 4, 2007
Date

Notary Public

My commission expires: June 18, 2008
Date

SEAL

ATTACHMENT 1A

REQUEST FOR ADDITIONAL INFORMATION
DUKE ENERGY CAROLINAS
CATAWBA NUCLEAR STATION, UNITS 1 AND 2
DOCKET NUMBERS 50-413 AND 50-414

Question:

It appears that the proposed modification will not verify the diesel generator (DG) emergency trips (Engine overspeed, Generator differential current, and Low lube oil pressure/ Low-low lube oil pressure, and Generator voltage - controlled overcurrent/Voltage control overcurrent relay scheme). Generic Letter (GL) 96-01 requires that all portions of the logic circuitry, including the parallel logic, interlocks, bypasses and inhibit circuits are adequately covered in the surveillance procedures to fulfill the technical specification requirements. Discuss how the staff can be assured that these emergency trips will function (trips DG when condition is present in order to avert substantial damage to the DG unit and do not trip when condition is not present) unless these critical trips are periodically tested.

Response:

A Description of Emergency Diesel Generator
Critical Automatic Trips Testing - Catawba Nuclear Station

Catawba has four critical automatic trips that are not bypassed during an Emergency Diesel Generator (EDG) autostart (blackout and/or safety injection). The four critical trips are as follows:

1. Engine Overspeed
2. Low Low Lube Oil Pressure
3. Generator Voltage – Controlled Overcurrent
4. Generator Differential Current

The following discusses how each trip is tested.

Engine Overspeed

Engine overspeed trip protection is accomplished by two speed switches. The redundant speed switches are located in a local diesel panel. They monitor the speed of the unit and are powered from the 125 VDC diesel battery supply through the use of a 125V to 24V converter. Of the speed switch's four internal relays, three are used to shutdown the diesel on overspeed or provide indication of overspeed. Additionally, a third speed switch provides indication to the tachometer and permissive outputs to the load sequencer and EDG Electrical Controls System (EQC).

The two out of two (2/2) overspeed trip logic is tested per PT/1(2)/A/4350/015A(B) in which jumpers are placed across terminals on the respective speed switches simulating overspeed signal resulting in the engine tripping. This testing is performed every 18 months.

Calibration of the speed switches is performed per IP/0/A/3680/09 on an 18 month frequency.

Low-Low Lube Oil Pressure

The 2/3 logic trip instrumentation for monitoring D/G Lube Oil Inlet Pressure falls under the requirements of independency of measurement of Reg. Guide 1.9. This is accomplished with a combination of two pressure switches and one transmitter that monitor the diesel engine lube oil inlet pressure and provide input to the 2 out of 3 circuit for the low-low lube oil pressure trip.

The 2 out of 3 low-low lube oil pressure trip logic is tested per PT/1(2)/A/4350/015A(B) by venting the respective pressure switches and transmitter and verifying the diesel engine trips. This testing is performed every 18 months.

Calibration of the instrumentation is performed per IP/1(2)/A/3681/002A(B) on a three year frequency.

Generator Voltage – Controlled Overcurrent

The Voltage Controlled Overcurrent (51V) relaying consists of one 51V relay per phase. If any combination of two out of the three relays pick up, the diesel generator lockout relay (86D) will energize and shutdown the diesel engine. This feature is tested per PT/1(2)/A/4350/15A(B) in which each 2/3 combination is verified. Jumpers are placed across terminals on the (51V) relay in order to simulate a voltage controlled overcurrent. The engine is actually shutdown during this test. Relaying calibration is performed per IP/0/A/4971/03 on a 24 month frequency. Logic testing per PT/1(2)/A/4350/015A(B) is performed every 18 months.

Generator Differential Current

The Differential Current (87G) relay energizes the diesel generator lockout relay (86D) which will shutdown the diesel generator during both testing and emergency conditions. This feature is tested per PT/1(2)/A/4350/15A(B) by placing a jumper across terminals on the (87G) relay to simulate a Trip Generator Fault signal. Actuation of the "Trip Generator Fault" alarm is verified as well as actuation of the (86D) lockout relay. Relaying calibration is performed per IP/0/A/4971/04 on a 24 month frequency. Logic testing per PT/1(2)/A/4350/015A(B) is performed every 18 months.

ATTACHMENT 1B

REQUEST FOR ADDITIONAL INFORMATION
DUKE ENERGY CAROLINAS
MCGUIRE NUCLEAR STATION, UNITS 1 and 2
DOCKET NUMBERS 50-369 AND 50-370

Question:

It appears that the proposed modification will not verify the diesel generator (DG) emergency trips (Engine overspeed, Generator differential current, and Low lube oil pressure/ Low-low lube oil pressure, and Generator voltage - controlled overcurrent/Voltage control overcurrent relay scheme). Generic Letter (GL) 96-01 requires that all portions of the logic circuitry, including the parallel logic, interlocks, bypasses and inhibit circuits are adequately covered in the surveillance procedures to fulfill the technical specification requirements. Discuss how the staff can be assured that these emergency trips will function (trips DG when condition is present in order to avert substantial damage to the DG unit and do not trip when condition is not present) unless these critical trips are periodically tested.

Response:

A Description of Emergency Diesel Generator Critical Automatic Trips Testing - McGuire Nuclear Station

McGuire has four critical automatic trips that are not bypassed during an Emergency Diesel Generator (EDG) autostart (blackout and/or safety injection). The four critical automatic trips are as follows:

1. Engine Overspeed
2. Generator Differential Current
3. Low Lube Oil Pressure
4. Generator Voltage - Controlled Overcurrent

The following shows how each critical automatic trip is tested to ensure it is not bypassed during emergency conditions:

Engine Overspeed

The engine overspeed trip is accomplished by three electronic speed switches. The speed switches have an internal relay which changes state when the overspeed setpoint is reached. If the engine overspeed setpoint is reached, an auxiliary relay downstream is energized to provide two out of three (2/3) logic scheme. If the 2/3 overspeed logic is achieved, then additional auxiliary relays energize to trip the diesel engine. The overspeed trip logic is checked as follows:

Speed Switch Calibration - The speed switch setpoints are checked/calibrated per a preventive maintenance (PM) activity on a SR (18 month) frequency via IP/1,2/A/3250/016A,B. This activity verifies the speed switch internal relay changes state at the appropriate setpoint. The downstream logic is not checked via this activity.

D/G Control Circuit Test, Overspeed 2/3 Logic Verification - The overspeed logic is checked during Periodic Test (PT) activity on a SR (18 month) frequency via PT/1,2/A/4351/001A,B. The activity installs jumpers around the speed switch internal relay contacts which were verified to change state during the speed switch calibration. Jumpers are installed on two speed switches at a time to simulate 2/3 logic. When jumpers are installed to simulate 2/3 logic, the downstream auxiliary relays are verified to energize, alarms verified, and a permissive in the D/G start circuit is verified to open. This is performed for all three possibilities of the 2/3 logic.

Generator Differential Current

The Differential Current (87G) relay actuates the diesel generator lockout (86D) relay which trips the engine during testing and emergency conditions. The 86D relay has a contact in the D/G start circuit which opens when the 87G relay picks-up during a high differential current condition. The opening of the 86D relay contact in the D/G start circuit will de-energize the D/G starting auxiliary relays which will result in engine shutdown. The generator differential current logic is checked as follows:

87G Relay Calibration - The 87G relay setpoints are checked/calibrated per a PM/PT activity on a 2 year frequency via IP/0/A/4971/04RE. This activity verifies the protective relay changes state at the appropriate setpoint.

D/G Protective Relaying Logic Test - The protective relaying logic test is performed per a PT activity on a 2 year frequency via IP/1,2/A/4971/008A,B. The protective relaying logic test installs a jumper around the output contact on the

87G relay which was verified to change state in the 87G relay calibration. When the jumper is installed, the 86D relay is verified to actuate and appropriate alarms are received. The contact in the D/G start circuit is not verified to change state during this activity. This contact is verified to change state in the following D/G Control Circuit Test.

D/G Control Circuit Test, D/G Differential Lockout Verification - The lockout logic is checked during Periodic Test (PT) activity on a SR (18 month) frequency via PT/1,2/A/4351/001A,B. The 86D relay is actuated in the same method as it was during the D/G Protective Relaying Logic Test. When the 86D relay actuates, it is verified that the appropriate alarms are received and a permissive in the D/G start circuit is verified to open.

Low Lube Oil Pressure

The Low Lube Oil Pressure trip consists of two pressure switches on each D/G. If one pressure switch senses low pressure, then an alarm will be received. If both pressure switches sense low pressure approximately 40 seconds after a D/G start, an alarm will be received and the D/G will perform an engine shutdown during testing and emergency conditions. The low lube oil pressure logic is checked as follows:

Pressure Switch Calibration - The setpoints on both pressure switches are checked/calibrated per a PM activity on a 1 year frequency via IP/1,2/A/3090/021LD. This activity verifies the pressure switches change state at the appropriate setpoint, appropriate alarms are received, and output contact feeding auxiliary relay changes state.

D/G Control Circuit Test, Low Lube Oil Pressure Logic Test - The low lube oil pressure logic is checked during Periodic Test (PT) activity on a SR (18 month) frequency via PT/1,2/A/4351/001A,B. Jumpers are installed across the output contacts of each pressure switch separately to verify an alarm is received and the permissive in the D/G start circuit does not open. Then a jumper is installed across the output contact of both pressure switches to simulate 2/2 logic. With the 2/2 logic, it is verified that a permissive in the D/G start circuit opens.

Generator Voltage - Controlled Overcurrent

The Voltage Controlled Overcurrent (51V) relaying consists of one 51V relay per phase. If one phase relay picks up, then an alarm is received. If 2/3 relays pick up, the diesel generator lockout (86D) relay will actuate which trips the engine during testing and emergency conditions. This 86D lockout relay is the same lockout relay that the Differential Current (87G) Relay can actuate. The 86D relay has a contact in the D/G start circuit which opens during a voltage-controlled overcurrent condition. The opening of the 86D relay contact in the D/G

start circuit will de-energize the D/G starting auxiliary relays which will result in engine shutdown. The voltage-controlled overcurrent logic is checked as follows:

51V Relay Calibration - The 51V relay setpoints are checked/calibrated per a PM activity on a 2 year frequency via IP/0/A/4971/003. This activity verifies the protective relay changes state at the appropriate setpoint.

D/G Protective Relaying Logic Test - The protective relaying logic test is performed per a PT activity on a 2 year frequency via IP/1,2/A/4971/008A,B. The protective relaying logic test actuates each phase relay separately and verifies each relay (1/3 logic) actuates the appropriate alarm. Then 2/3 relays are actuated and it is verified that the appropriate alarms and 86D lockout relay are actuated. This is performed for all three possibilities of the 2/3 logic. However, the contact in the D/G start circuit is not verified to change state during this activity. This contact is verified to change state in the following D/G Control Circuit Test.

D/G Control Circuit Test, D/G Differential Lockout Verification - The lockout logic is checked during Periodic Test (PT) activity on a SR (18 month) frequency via PT/1,2/A/4351/001A,B. This 86D lockout relay is the same lockout relay that the Differential Current (87G) Relay can actuate. Its output contact and associated alarm are verified during D/G Differential Lockout Verification. The 86D relay is actuated by installing a jumper across the 87G relay output contact. When the 86D relay actuates, it is verified that the appropriate alarms are received and a permissive in the D/G start circuit is verified to open.