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September 9, 2008

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

Subject: Duke Energy Carolinas, LLC
Catawba Nuclear Station, Unit 2
Docket No. 50-414
Special Report

Duke Energy is submitting this report pursuant to the requirements of Catawba Nuclear Station Selected Licensee Commitment (SLC) 16.7-15, Remedial Action "B." This SLC, which concerns Hydrogen Monitor operability, states that if one Hydrogen Monitor channel is inoperable for greater than 30 days that a Special Report shall be prepared and submitted within 14 days of the determination that noncompliance with the Selected Licensee Commitments (SLC) had been made. The report shall include the cause of the inoperability and plans for restoring the system to operable status.

This Special Report is being submitted due to the inoperability of the Unit 2 Channel A Hydrogen Monitor which exceeded 30 days. The Special Report is included as an attachment.

There are no commitments contained in this letter. Any questions concerning this report may be directed to Marc Sawicki 803 701-5191.

Sincerely,


J. R. Morris *for J.R. Morris*

Attachment

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xc: L. A. Reyes, Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
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Atlanta, GA 30303

J. F. Stang, Jr., NRR Project Manager
U.S. Nuclear Regulatory Commission
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Rockville, MD 20852-2738

A.T. Sabisch, Senior Resident Inspector
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bxc:	NCMPA-1	
	NCEMC	
	SREC	
	PMPA	
	R. D. Hart	CN01RC
	B. G. Davenport	ON02DB
	K. Ashe	MG01RC
	E. L. Black, III	CN03CE
	M.J. Sawicki	CN01RC
	Electronic Licensing Library	EC050
	RGC File	CN01RC
	Master File CN-801.01	CN04DM

Reporting Requirement:

Catawba Nuclear Station Selected Licensee Commitment (SLC) 16.7-15, "Hydrogen Monitors," Remedial Action "A" requires that if one Hydrogen Monitor channel is inoperable, to restore that channel to operable status within 30 days. On August 26, 2008, it was determined that the 2A Hydrogen Monitor had been inoperable from January 5, 2008, until August 12, 2008, which exceeded the 30 day limit. Therefore Remedial Action "B" is entered which requires that if the Hydrogen Monitor channel cannot be restored as required in Remedial Action "A", that a Special Report is to be prepared and submitted within 14 days to the Nuclear Regulatory Commission. The report shall outline the cause of the inoperability and the plans for restoring the channel to operable status. The report will be submitted within 14 days of the initial inoperability determination of the Hydrogen Monitor.

Description of the Event:

On January 5, 2008, the "READY" light was extinguished on the 2A Hydrogen Analyzer Control Unit. At that time a work request was written to repair the suspected problem; a failed light bulb. As there have been bulbs and lenses on these units needing replacement in the past, repair was not urgent.

On July 25, 2008, while performing the 92 day calibration and 18 month calibration on Unit 2A Train Hydrogen Analyzer, the loss of indications and lights was observed on the Hydrogen Analyzer Control Unit, along with the trip of the sample pump. All lights illuminated during the calibration went dark with the exception of the "Standby" light, which always remained illuminated. Lights then extinguished unexpectedly three times during the calibration check and lasted approximately 1 to 2 minutes. A work request was written to address this problem. Subsequent investigation into this problem and review of the "READY" light issue from January 5, 2008 concluded that the 2A Hydrogen Analyzer had been in noncompliance with SLC 16.7-15 from January 5, 2008 until August 12, 2008.

The Containment Hydrogen Monitors (Hydrogen Analyzers) are used to monitor the concentration of hydrogen in containment after a severe accident involving core damage and confirm that random or deliberate ignition has occurred. These components are used to determine if the VY System (Containment Hydrogen Sample and Purge) should be manually actuated. Two independent hydrogen monitors, while not used during normal operation, are required to be operable during Modes 1, and 2 and 3 to assure their post-LOCA accident availability. The hydrogen monitors are required to mitigate the consequences of a Loss of Coolant Accident (LOCA). During a severe accident, the hydrogen monitors are used to assess the degree of core damage and confirm that random or deliberate ignition has occurred. Detection of hydrogen gas ensures that mitigation actions can be taken to maintain containment hydrogen concentration levels below explosive limits.

Cause of Inoperability:

Thermoswitch TC3 was opening and closing (cycling) because it was found to be operating around the same temperature to which the enclosure temperature (Thermoswitch TC2) was operating. This cycling of TC3 correlated to the cycling of the extinguishing lights which had been observed on July 25, 2008. Furthermore, each time TC3 opened, the power to operate the Hydrogen Analyzer was lost such that the Hydrogen Analyzer would not have been able to perform its specified safety function if called upon during an accident.

The apparent cause of the inoperability is a lack of preventive maintenance, as the thermoswitches have never been checked and have drifted from their original setpoints. A history search did not reveal any problems in the past with any thermoswitches, leading one to assume that the thermoswitches have never been checked or adjusted. Further, neither the preventative maintenance work order nor the calibration procedure specifies to perform a calibration check of the thermoswitches.

Interim Actions:

The Hydrogen Analyzer was restored to operable status by August 12, 2008 by properly adjusting the setpoints for TC2 and TC3.

Individual Work Requests have been written to check and adjust, if necessary, the setpoints of TC2 and TC3 in all three other Hydrogen Analyzers at Catawba.

Planned Actions:

No Compensatory Actions are required as the Unit 2A Containment Hydrogen Monitor is operable. The site Corrective Action Program is tracking this issue. The following corrective actions are being taken to preclude reoccurrence:

1. Revision of the inspection procedure IP/1&2/A/3176/001C to check the setpoints of TC2 and TC3.
2. Revise 18-month Preventative Maintenance Model Work Orders to check the setpoints of TC2 and TC3.
3. Request editorial modification to add additional guidance into vendor manual regarding the vendor's (Fenwal) thermoswitches.
4. Request OPS to review this event and determine how to better evaluate up-front failure modes and effects such that the proper focus is placed on work orders.
5. Add a statement to the Nuclear Assets Suite Program relating that failures of certain lights to illuminate may be caused by conditions rendering the Hydrogen Monitor inoperable.