



Scott L. Batson
Vice President
Oconee Nuclear Station

Duke Energy
ON01VP | 7800 Rochester Hwy
Seneca, SC 29672

o: 864.873.3274
f: 864.873.4208
Scott.Batson@duke-energy.com

ONS-2014-095

June 24, 2014

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

Duke Energy Carolinas, LLC (Duke Energy)
Oconee Nuclear Station (ONS), Unit No. 3
Docket Nos. 50-287
Renewed License No DPR-55

Subject: Special Report in accordance with Selected Licensee Commitment (SLC) 16.7.4,
"Hydrogen Analyzers"

Pursuant to Oconee Nuclear Station's Selected Licensee Commitment (SLC) 16.7.4, Condition C, this letter constitutes a Special Report regarding the inoperability of one channel of Hydrogen Analyzers on Unit 3. The SLC commitment requires that if one Hydrogen Analyzer channel is inoperable for greater than 30 days or if both channels are inoperable for greater than 72 hours, a Special Report shall be prepared and submitted within 14 days of the entering the condition. The report is to outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the channel(s) to operable status.

This Special Report is being submitted due to the "B" channel of the Unit 3 Hydrogen analyzer system being non-functional for greater than 30 days. The information required by this Special Report is included as an attachment. The affected channel was returned to service on June 12, 2014.

This letter contains no new regulatory commitments.

If you have any questions regarding this submittal, please contact Corey Gray, Oconee Regulatory Affairs, at 864-873-6325.

Sincerely,

Scott L. Batson
Vice President
Oconee Nuclear Station

Attachment: Oconee Nuclear Station Unit 3 Special Report per SLC 16.7.4

IE22
NKH

U.S Nuclear Regulatory Commission

June 24, 2014

Page 2

cc:

Mr. Victor McCree, Regional Administrator
U.S. Nuclear Regulatory Commission – Region II
Marquis One Tower
245 Peachtree Center Ave., NE Suite 1200
Atlanta, Georgia 30303-1257

Mr. James R. Hall, Project Manager (ONS)
(by electronic mail only)
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Mail Stop O-8G9A
Rockville, MD 20852

Mr. Eddy Crowe
NRC Senior Resident Inspector
Oconee Nuclear Station

Attachment
Oconee Nuclear Station, Unit 3
Special Report per SLC 16.7.4

Reporting Requirement

The ONS Selected Licensee Commitment (SLC) 16.7.4, "Hydrogen Analyzers," is applicable in Modes 1, 2, and 3. Condition C of the SLC addresses the circumstance of having one Hydrogen Analyzer channel inoperable for greater than 30 days or two channels inoperable for greater than 72 hours. When either of these scenarios occurs, a Special Report is required to be prepared and submitted within 14 days. The report is to outline a preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the channel(s) to operable status.

Background

The Hydrogen Analyzers provide a means to detect high hydrogen concentrations. The Hydrogen Analyzers serve as Regulatory Guide 1.97, Category 3 instrumentation, and are used to assess the degree of core damage following a severe accident. They also can affirm if an ignition of hydrogen has occurred. Two operable channels ensure that a single failure prevents the ability to determine if high hydrogen concentrations are present.

Description of Condition

Unit 3 initiated refueling outage activities in early April 2014. During the outage, Maintenance conducted a functional check on the 3B Reactor Building Hydrogen Analyzer. The Hydrogen Analyzer did not meet the requirements of the functional check. Although troubleshooting and repair efforts were initiated, the long durations required for iterations of troubleshooting and testing (approximately 12-16 hours for a complete cycle) prevented repairs from being completed prior to mode escalation coming out of the outage. Mode 3 was entered on May 12, 2014 at 0130 and the "B" channel was not restored by June 11, 2014 at 0130. This required entry into Condition C of the SLC, which in turn requires this Special Report to be written.

Cause of the Non-functional Monitors

The Hydrogen Analyzer was declared non-functional due to the unacceptable functional test results obtained as part of post maintenance testing of reactor building sample valves. During troubleshooting the 3B Hydrogen Analyzer temperature switches were recalibrated, the Hydrogen Analyzer cell flow regulator and the Hydrogen Analyzer cell were replaced. Upon completion of these maintenance activities, the 3B Hydrogen Analyzer hydrogen concentration indications returned to normal and a functional check was successfully completed. The 3B Hydrogen Analyzer channel was then declared functional on June 12, 2014.

Preplanned Alternate Method of Monitoring

The pre-planned alternate method for monitoring reactor building hydrogen concentrations is to obtain discrete samples for manual analysis.

During times when information regarding reactor building hydrogen concentration would be needed, the Technical Support Center (TSC) will initiate a request (via the Operational Support Center) for Radiation Protection (RP) to obtain a grab sample from the applicable reactor

Attachment
Oconee Nuclear Station, Unit 3
Special Report per SLC 16.7.4

building process radiation monitor sample line. The sample is given to Chemistry for analysis and the results (% of H₂) are provided back to the TSC.

This method has been reviewed and determined to provide adequate information for the decision making processes that would use hydrogen concentration as an input.

Plans and Schedule for Restoration

Troubleshooting and repair of the B channel was ongoing from time of SLC 16.7.4 entry Condition A. Condition C was entered on June 11, 2014 and the B channel was returned to service June 12, 2014.