



Duke Energy Corporation

McGuire Nuclear Station
12700 Hagers Ferry Road
Huntersville, NC 28078-9340

(704) 875-4800 OFFICE
(704) 875-4809 FAX

H. B. Barroh
Vice President

October 19, 1998

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

Subject: McGuire Nuclear Station
Docket No. 50-370
NRC Inspection Report 98-08
Violation 50-370/98-08-02
Reply to Notice of Violation (NOV)

Pursuant to the provisions of 10 CFR 2.201, attached is Duke Energy Corporation's response to a Notice of Violation dated September 21, 1998 regarding inadequate venting during post-maintenance restoration of ECCS subsystems and inadequate procedures to ensure that Emergency Core Cooling System (ECCS) piping remained full of water.

Duke Energy Corporation acknowledges that this is a violation of regulatory requirements. However, please note that the McGuire Station ECCS subsystems remained operable and capable of performing their design function during this event.

Section 3 of this response lists the only regulatory commitments associated with McGuire's response to this Notice of Violation. The committed and implemented corrective actions described in the attachment will promote early identification and correction of any degraded conditions in the ECCS subsystems at the McGuire Station. Note that your Notice of Violation also requested that this response address any reviews Duke Energy has conducted to determine if other systems at the McGuire Station have shortcomings with their venting procedures. Although they are not committed actions, we have generated corrective actions to perform these reviews on other safety related systems at McGuire.

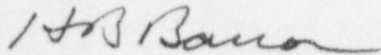
9810270358 981019
PDR ADOCK 05000370
G PDR

IED 11

U.S. Nuclear Regulatory Commission
Document Control Desk
October 19, 1998
Page 2

Questions regarding this response should be directed to J.
W. Bryant at (704) 875-4162.

Very truly yours,



H.B. Barron, Vice President
McGuire Nuclear Station

Attachment

cc: Mr. Luis A. Reyes
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
Atlanta Federal Center
61 Forsyth St., Suite 23T85
Atlanta, Georgia 30323

Mr. Frank Rinaldi
U. S. Nuclear Regulatory Administration
Office of Nuclear Reactor Regulation
One White Flint North, Mail Stop 9H3
Washington D.C. 20555

Mr. Scott Shaeffer
Senior Resident Inspector
McGuire Nuclear Station

McGuire Nuclear Station
Reply to Notice of Violation 50-370/98-08-02
October 19, 1998

Restatement of Violation 50-370/98-08-02

McGuire Technical Specification 6.8.1 requires that written procedures shall be established, implemented, and maintained for activities recommended in Appendix A of Regulatory Guide 1.33, Quality Assurance Program Requirements, revision 2, February 1978. Procedures for filling and venting the emergency core cooling system (ECCS) are included in Appendix A.

Operation Management Procedure (OMP) 7-1, Removal and Restoration (R&R) Requirements, requires, in part, that when designating vent valves for filling and venting, consider the physical layout of piping to ensure all system high points are vented.

Technical Specification Surveillance Requirement (TSSR) 4.5.2.b.1, requires, in part, that each ECCS subsystem shall be demonstrated operable, at least once per 31 days by verifying that the ECCS piping is full of water by venting the ECCS pump casings and accessible discharge piping high points, unless the pumps and associated piping are in service or have been in service within 31 days.

Implementation of TSSR 4.5.2.b.1 is accomplished by McGuire procedure PT/2/A/4200/019, Revision 12, Unit 2 ECCS Pumps and Piping Vent.

Contrary to the above:

1. On or before December 17, 1997, during restoration of the Unit 2 ECCS subsystems following maintenance on valve 2NI-136B, Operations personnel failed to designate the appropriate vent valves for venting to properly return the system to service as required by OMP 7-1. Specifically, high point vent valve 2ND-77 was not designated following drain and refill of its associated segment of ECCS piping. As a result, an undetected volume of gas was left in the ECCS piping.
2. Procedure PT/2/A/4200/019, Revision 12, Unit 2 ECCS Pumps and Piping Vent, was inadequate to ensure that the ECCS piping was full of water during monthly system venting performed between December 17, 1997, and June 5, 1998. Specifically, accessible discharge piping

high point vent 2ND-77 was not included in the venting process. Subsequently, it was determined that a significant amount of gas was located in proximity to vent valve 2ND-77 during the subject period.

1. Reason for the violation:

1. Inadequate venting procedures were used during the restoration of the Unit 2 ECCS subsystems following maintenance on valve 2NI-136B. Specifically, Operations personnel failed to adequately consider the layout of the piping involved and did not utilize all the vent valves required to ensure that the affected piping was full of water.
2. Procedure PT/2/A/4200/019, Unit 2 ECCS Pumps and Piping Vent, was inadequate to ensure that the ECCS piping was full of water during monthly system venting. Specifically, Engineering personnel failed to include in this procedure all the vent valves required to ensure that the ECCS piping was full of water.

The specific events which led to these deficiencies are described below.

During the 2EOC11 refueling outage, the affected portion of the ECCS piping was drained in order to implement a modification on valve 2ND-136B. On or before December 17, 1997, while refilling this piping, Operations personnel used valve 2ND-83 as a vent path. This valve is located in the subject ECCS piping upstream of 2NI-136B. Valve 2ND-77 is another vent valve in the same section of piping and is located between 2NI-136B and 2ND-83. Based upon the piping geometry and the lower elevation of 2ND-77 relative to 2ND-83, it was decided that venting through valve 2ND-77 was not necessary to ensure that the ECCS piping was full of water upon completion of refill. As a result, an undetected volume of gas was left in this piping.

Prior to a May 18, 1998 revision, PT/2/A/4200/019 did not identify 2ND-77 as a vent point. Given the geometry of the subject ECCS piping and the lower elevation of 2ND-77 relative to 2ND-83, it was decided that venting through 2ND-77 was not necessary to ensure that this piping was full of water. Consequently, on June 5, 1998, during the first performance of PT/2/A/4200/019 following the addition of 2ND-77 to this procedure, an accumulation of gas was

discovered in the ECCS piping upstream of 2NI-136B when 2ND-77 was opened.

A review of this event concluded that not all of the air was removed from the subject ECCS piping during the post-maintenance refill in December 1997. This review also determined that, due to the layout of this piping, venting only at 2ND-83 was inadequate for ensuring that the piping is full of water.

2. Corrective steps that have been taken and the results achieved:

1. Further investigation, including ultrasonic examination to determine the extent of voiding, was performed both upstream and downstream of 2NI-136B to ensure that all gas pockets had been identified and removed. This confirmed the present operability of the affected ECCS subsystems with respect to gas voiding.
2. Calculations were generated which determined that the volumes of gas found in the ECCS piping did not render the affected ECCS subsystems inoperable with respect to gas voiding at any time in the past.
3. Vent point 2ND-77 has been added to procedure PT/2/A/4200/019, Unit 2 ECCS Pumps and Piping Vent. In addition, a review was performed of this procedure and the equivalent Unit 1 procedure. This review determined that these procedures are adequate to ensure that the applicable ECCS subsystems remain full of water.
4. Engineering performed a review of the block tag out (BTO) and removal and restoration (R&R) processes associated with startup of Unit 1 at the end of refueling outage 1EOC12. This review verified that these BTO and R&R processes provided adequate direction for venting of the Unit 1 ECCS piping following restoration of the ECCS subsystems.

The above corrective actions address the root cause of this event.

3. Corrective steps that will be taken to avoid further violations:

1. Operations and Engineering personnel will identify and implement any changes to the BTO and R&R processes and other plant procedures as necessary to help ensure that the ECCS subsystems are sufficiently filled and vented following maintenance or other activities which could introduce gas to the system. These actions will be completed prior to startup at the end of the next Unit 2 refueling outage (2EOC12).
2. A review will be performed of the plant training processes to identify and implement any changes to the Non-Licensed Operator (NLO) program necessary to ensure that they are aware of the proper vent techniques to be utilized when restoring ECCS subsystems. These actions will be completed prior to startup at the end of the next Unit 2 refueling outage (2EOC12).

4. Date when full compliance will be achieved:

McGuire Nuclear Station is currently in full compliance. The implemented and committed corrective actions will ensure that future ECCS venting evolutions are performed satisfactorily.