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Nuclear Business Unit

APR 10 2000

LR-N000135

United States Nuclear Regulatory Commission  
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Washington, DC 20555

**SPECIAL REPORT 00-002  
HOPE CREEK GENERATING STATION  
FACILITY OPERATING LICENSE NPF-57  
DOCKET NO. 50-354**

Gentlemen:

This Special Report is being submitted pursuant to the requirements of Hope Creek Technical Specification 3.3.7.5-1, Action 81 b, due to the Filter Recirculation and Ventilation System (FRVS) Vent Radiation monitor being inoperable for more than 72 hours. Information concerning the inoperability is provided below.

On March 25, 2000 during parallel operation of the Reactor Building Ventilation System (RBVS) and FRVS, loss of isokinetic flow and loss of flow control alarms were received from the FRVS Radiation monitor. This resulted in a declaration of inoperability of the radiation monitor.

During troubleshooting on March 26, 2000, the 'B' FRVS fan was run in two different configurations (first in parallel with RBVS and then with RBVS secured). When running in parallel with RBVS, reactor building pressure was maintained at the RBVS differential pressure setpoint of  $-0.35$  inches water gauge, FRVS exhaust flow on the RMS skid (as measured in the vent stack) was upscale at 10,100 SCFM, and loss of isokinetic control and loss of flow control alarms were received. The FRVS exhaust damper was observed to be modulating near the full-open position, and the recirculation damper was fully closed. When RBVS was secured, reactor building pressure lowered to the FRVS differential pressure setpoint of  $-0.55$  inches water gauge, FRVS exhaust flow lowered significantly, and the loss of isokinetic control and loss of flow control alarms were cleared.

Other information obtained during troubleshooting included the following:

- The FRVS radiation monitor flow instrumentation channels were found in calibration.
- Flow traverse was performed with parallel operation of FRVS and RBVS that indicated flow was laminar and that the FRVS RMS flow indication should have been on scale ( $<10,100$  SCFM).

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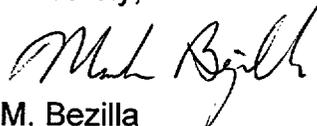
- A hand held probe was used to take actual readings in the duct with parallel operation of FRVS and RBVS. This test indicated that the flow near the installed sensor was ~10,390 to 11,800 SCFM. This measurement occurred coincident with the process flow readings and the receipt of alarms.
- The apparent cause for the difference between the traverse readings and the hand held probe readings is the location of the test points for each test. Traverse points were upstream of a flow straightener while FRVS radiation monitor flow sensors are downstream and in close proximity to the flow straightener.
- The flow straightener takes up area in the duct (i.e., reduces the flow area) and therefore affects the measured flow readings by increasing the backpressure sensed by the traverse (manometer) prior to the straightener and increasing the velocity sensed by the radiation monitor flow sensors located just downstream of the flow straightener. These flow characteristics around the flow straightener are amplified at high flow conditions typical of running RBVS and FRVS in parallel.
- Also contributing to high flow conditions in FRVS is the set point change performed during the eighth refueling outage. This change lowered the reactor building secondary containment pressure set point from -0.35 inches water gauge to -0.55 inches water gauge when FRVS is in service. The RBVS set point was left at -0.35 inches water gauge.
- When RBVS is secured and FRVS is in operation, the data taken showed that FRVS radiation monitors functioned well within expected parameters. The surveillance procedures and the troubleshooting measurements with alternate flow measurement devices were used for this evaluation.

Based on the above information, plant personnel concluded that, with FRVS operating alone (without RBVS), the FRVS radiation monitor flow detector for the vent duct is capable of performing its design function and is fully functional in this mode of operation. The monitor was therefore capable of performing its Technical Specification function (accident monitoring) prior to its removal from service due to its perceived inoperability. The monitor was returned to service and the Technical Specification action statement was exited on April 7, 2000.

During the time the monitor was out of service, Technical Specification Action Statement 3.3.7.5, "Accident Monitoring Instrumentation", was entered, and compensatory measures were initiated in accordance with plant Technical Specifications and the Hope Creek Offsite Dose Calculation Manual.

Should you have any questions or comments on this transmittal, please contact C. E. Manges, Jr. at 856-339-3234.

Sincerely,



M. Bezilla  
Vice President - Operations

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