ENCLOSURE 2

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT

RADIOACTIVE INOPERABLE EFFLUENT INSTRUMENTATION REPORT

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Radioactive Inoperable Effluent Instrumentation Report

This report is to comply with Radiological Effluent Technical Specifications (RETS) section 3.2.D.2 and 3.2.K.2 reporting requirements for instruments that are inoperable for more than 30 days. The RETS became effective at BFN on May 6, 1987. This report covers the period from July 1 - December 31, 1987. Because of significant technical specification changes, a large number of radioactive effluent monitoring instruments became technically inoperable on May 6, 1987. RETS were incorporated during a BFN administrative outage. Site resources were and still are endeavoring to resolve previously identified problem areas. Modifications required to bring BFN effluent monitoring equipment into technical compliance with RETS competes for resources with other regulatory driven modifications. This report explains why the inoperability of each instrument was not corrected in a timely manner.

The instruments that were inoperable for more than 30 days are:

RHR service water monitor 1-90-133

RHR service water monitor 1-90-134

RHR service water monitor 2-90-133

RHR service water monitor 2-90-134

RHR service water monitor 3-90-133

RHR service water monitor 3-90-134

Raw cooling water monitor 1-90-132

Raw cooling water monitor 2-90-132

Raw cooling water monitor 3-90-132

Liquid radwaste discharge monitor 0-90-130

Liquid radwaste discharge flow loop 77-60

Stack effluent flow meter 90-271

Stack effluent monitor 90-147A

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Stack effluent monitor 90-147B

Building ventilation exhaust monitor 2-90-250

Building ventilation exhaust monitor 0-90-252

Posttreatment noble gas monitor 1-90-265

Posttreatment noble gas monitor 1-90-266

Posttreatment noble gas monitor 2-90-265

Posttreatment noble gas monitor 2-90-266

Posttreatment noble gas monitor 3-90-265

Posttreatment noble gas monitor 3-90-266

During the entire reporting period fuel was off loaded from all three units and all compensatory sampling requirements were met.

0592m

Liquid Process Radiation Monitors

BFN RETS Table 3.2.D requires RHR Service Water Monitors (1-90-133, 1-90-134, 2-90-133, 2-90-134, 3-90-133, and 3-90-134) and Raw Cooling Water Monitors (1-90-132, 2-90-132, and 3-90-132) to be operable when these systems are in service. Contrary to this requirement, these nine monitors were inoperable during the entire reporting period.

These monitors were declared inoperable because they were not designed to meet the requirements in RETS Table 4.2.D Footnote 2. This footnote requires that control room annunciation occur if instrument controls are not set in operate mode. Design Change Request 1687, revision 1, was written to correct this problem and was approved on September 29, 1986. Engineering Change Notices (ECNs) P0976 (Unit 1), P0977 (Unit 2), and P0978 (Unit 3) were approved on January 4, 1988 after resolving various design problems.

0592m

Liquid Radwaste Effluent Instrumentation

BFN RETS Table 3.2.D requires the liquid radwaste effluent monitor (90-130) and flow rate loop (77-60) to be operable during liquid radwaste releases. Contrary to this requirement, these two instruments were technically inoperable during the entire reporting period.

The liquid radwaste effluent monitor was declared technically inoperable because it was not designed to meet the requirements in RETS Table 4.2.D Footnote 1. Footnote 1 requires automatic isolation to occur if the instrument encounters an inoperative/downscale failure. The monitor was, however, in service and would have alarmed causing operator action to terminate release. Additionally, the required supplemental sampling requirements were performed. DCR 3417 R1 was written to correct this problem and was approved on February 6, 1987. ECN 5523 was issued June 18, 1987 and this modification has been completed in the field. Some delays were encountered while writing the post modification test. The flow rate loop was declared technically inoperable because Surveillance Instructions (SIs) to meet the channel calibration and functional test requirements were not written and performed.

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Stack Radioactive Effluent Instrumentation

The stack effluent noble gas monitors (90-147A and B) and the stack flow meter (90-271) were inoperable during this reporting period. BFN RETS Table 4.2.K Footnote 1 requires that stack noble gas monitors (90-147A and B) be calibrated using National Bureau of Standards (NBS) traceable radioactive standards. NBS traceable calibrations were completed on April 13, 1987. However, upgraded Surveillance Instructions (SIs) incorporating the new calibration results were delayed in being approved due to new procedure format and walkdown requirements.

The stack flow meter is also inoperable because calibration and functional SIs have not been performed. Fuel was off-loaded for all three units and no fuel movements occurred during this period. Results of compensatory lab analyses of stack effluent indicated no anomolies.

All applicable surveillance instructions have been approved.

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Building Ventilation Exhaust Monitors

BFN RETS Table 3.2.K requires reactor/turbine building ventilation monitors (1-90-250, 2-90-250, and 3-90-250) and the radwaste building vent monitor (0-90-252) to be operable at all times and the turbine building exhaust monitors (1-90-249, 1-90-251, 2-90-249, 2-90-251, 3-90-249, and 3-90-251) to be operable during releases via this pathway. Contrary to this requirements, two monitors (2-90-250 and 0-90-252) were not operable for over 30 days. Fuel was off-loaded for all three vessels and no fuel handling occurred during the period of inoperability. Compensatory lab analyses indicated no detectable noble gas activity in ventilation releases.

The two monitors were inoperable due to sample pump maintenance problems. 0-90-252 was placed back in service on October 30, 1987 and 2-90-250 was placed in service on November 3, 1987.

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Offgas Posttreatment

BFN RETS Table 3.2.K requires the offgas posttreatment noble gas monitors (1-90-265, 1-90-266, 2-90-265, 2-90-266, 3-90-265, and 3-90-266) to be operable at all times. Table 4.2.K requires performance of functional tests and channel calibrations for these radiation monitors. Contrary to the requirements of Table 4.2.K functional tests and channel calibrations have not been performed and the instruments were taken out of service.

Approval of upgraded surveillance instructions for these monitors was delayed due to format and walkdown requirements. In addition to procedure problems, sample pump problems have also been encountered. Additional procedure changes need to be approved before the monitors can be returned to service.

The offgas systems were not in service during this period.

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