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Joseph R. Bynum
Vice President, Nuclear Operations

APR 01 1991

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

Dear Sir:

TVA - BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 1 - DOCKET NO. 50-259 - FACILITY OPERATING LICENSE DPR-33 - REPORTABLE OCCURRENCE REPORT BFRO-50-259/91003

The enclosed report provides details concerning the identification of gaseous and liquid effluent samples that were missed on two separate occasions. As a result of the required samples being missed, technical specifications monitoring requirements were exceeded. This report is submitted in accordance with 10 CFR 50.73(a)(2)(i)(B).

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. R. Bynum

Enclosure
cc: see page 2

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NRC Form 366 (6-89) | U.S. NUCLEAR REGULATORY COMMISSION | Approved OMB No. 3150-0104 Expires 4/30/92

LICENSEE EVENT REPORT (LER)

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TITLE (4) Gaseous and liquid effluent samples that were missed due to improper work activities caused Technical Specification requirements to be exceeded.

EVENT DAY (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
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0 3	0 1	9 1	9 1	0 0 3	0 0	0 4	0 1	9 1		0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following)(11)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (AREA CODE)
J. E. Wallace, Compliance Licensing Engineer	2 0 5 7 2 9 - 2 0 5 3

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On March 1, 1991, TVA discovered that a liquid sample and a gaseous effluent flow rate measurement were missed. Although a Radiochemical Laboratory Analyst (RLA) had documented that the work activities were completed, security keycard data could not support that the RLA was in the sampling areas at the time of the sampling. TVA, therefore, believes that technical requirements were not met and submits this report in accordance with 10 CFR 50.73(a)(2)(i).

The root cause of this event was poor work practices. Specifically, the RLA signed off steps in surveillance instructions (SIs) that he personally did not perform. A contributing factor to this event was inadequate supervision in that the chemistry shift supervisor did not ensure compensatory SIs were completed when performed.

Immediate corrective actions were to notify the Operations Manager and to remove the affected RLA from safety related activities. The long-term corrective actions to preclude recurrence are: (1) appropriate personnel corrective actions were administered to chemistry personnel, (2) TVA is continuing to investigate this event, (3) chemistry personnel were retrained on their responsibility when initializing steps in procedures, (4) chemistry managers are required to review and sign-off compensatory SI data on a shift-by-shift basis for completeness and accuracy, (5) chemistry compensatory SIs will be revised to include sign-off spaces for chemistry managers, (6) chemistry management conducted a review of chemistry laboratory work activities, and (7) a site-wide memorandum on the significance of signatures has been written.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

DESCRIPTION OF EVENT

On March 1, 1991, TVA discovered that gaseous and liquid compensatory measures were not performed as required by technical specifications; that is, whenever an effluent radiation monitoring [IL] equipment is inoperable compensatory measures must be performed. The gaseous effluent flow rate measurement for the reactor/turbine building ventilation system [VA] was missed on December 5, 1990 at 0400 hours, while the liquid sample for the raw cooling water (RCW) system [KG] was missed on December 11, 1990 at 1003 hours. TVA arrived at the conclusion that these work activities may not have been conducted after an investigation of discrepancies in surveillance instruction (SI) data entries. Many of the discrepancies were resolved after supporting evidence corroborated that the tasks were performed. However, TVA concluded that one RLA did not conduct two required work activities.

On December 30, 1990, the chemistry section became aware of a discrepancy between compensatory SI data entries and refuel floor access logs as a result of an investigation for LER BFRO 50-296/91005. This investigation identified that a Radiochemical Laboratory Analyst (RLA) (utility non-licensed) was not signed in on a refuel floor log sheet at the time a flow measurement was allegedly performed.

Following a preliminary chemistry organization investigation of several apparent discrepancies, TVA turned the investigation over to the quality assurance (QA) section on January 18, 1991. The QA investigation reviewed SI data sheets and security logs for a seven-week period, and identified 18 potential missed work activity discrepancies. Of the 18 discrepancies, 17 involved missed gaseous sample flow rate measurements and/or samples, one implicated a missed liquid sample. TVA found supporting evidence to corroborate performance of 16 potential discrepancies.

On March 1, 1991, TVA concluded that two discrepancies could not be corroborated and reported this event in accordance with applicable regulations.

During this event, all three units were defueled and no fuel handling or operations over the spent fuel were performed. The technical specifications requirements to obtain continuous air monitor (CAM) compensatory sample flow rate measurements every four hours and RCW samples every eight hours were not satisfied. Therefore, this event is reportable under 10 CFR 50.73(a)(2)(i).

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ANALYSIS OF EVENT

Upon analyzing both missed activities, TVA concluded that the consequences of a release for these missed work activities did not have a significant affect to the environs.

Gaseous Sample

CAMs take an isokinetic sample of various exhaust ventilation effluents and the release rate for each activity is electronically fed to the control room. A high radioactivity or monitor malfunctions also alarm in the main control room. Since this monitor does not initiate an isolation signal, the system is not essential during a transient or accident; consequently, no redundancy is required.

The absence of continuous monitoring could have resulted in an unmonitored release to the environment when the gaseous sample flow rate measurement was missed. An evaluation of the available data indicated that there was a low probability that any radiological release via this pathway had occurred because of the current plant condition. Finally, the isolation signals for plant ventilation systems are generated from a Geiger-Mueller type detector, externally attached to the effluent ducts.

Liquid Sample

RCW is required to remove heat from turbine associated equipment, accessories located in and adjacent to the turbine building, reactor building closed cooling water heat exchangers, and other reactor-associated equipment that utilize raw cooling water.

The liquid sample missed occurred on Unit 1 only which has been shut down since March 1985. Chemistry RCW samples analyzed before, as well as after the missed sample, have not shown radioactivity in the effluent above background levels. Since the plant conditions were stable during this period, TVA presumes that the the radiological consequences to the environs are comparable to similar analyzed samples.

The missed chemistry activities in this event were documented as completed. However, security keycard logs could not support that the RLA was in the sampling areas at the time of the sampling. Therefore, TVA presumes that the above work activities were not conducted.

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CAUSE OF EVENT

The root cause of the event was poor work practices. Specifically, the RLA signed off steps in the SIs that he personally did not perform. As a result, two compensatory sample activities were missed. A contributing factor for the event was inadequate supervision in that the chemistry shift supervisor did not ensure compensatory SIs were completed when performed.

CORRECTIVE ACTION

Immediate corrective actions were taken to correct this event. Security data was obtained and reviewed. Extensive interviews were conducted to properly assess the extent of the problem. The Operations Manager was notified of the problem. QA performed an independent, in-depth investigation. Finally, RLAs involved in potential deficiencies were prevented from performing safety-related activities.

The long-term corrective actions to preclude recurrence include: (1) chemistry personnel involved in this event received personnel corrective actions in accordance with approved procedures, (2) an additional investigation of these missed work activities is in progress; if additional findings are identified that are contrary to what has been reported in this LER, TVA will provide a supplemental report, (3) chemistry personnel were retrained on their responsibilities when initializing steps in procedures, (5) first-line chemistry managers are required to review in-process compensatory SIs on a shift-by-shift basis to ensure completeness and to ensure acceptance criteria have been met, (4) sign-off spaces for chemistry shift supervisors to initial will be added to chemistry compensatory SIs for verifying that each compensatory measure has been met, (6) chemistry management conducted a two-week review of chemistry laboratory activities to determine optimal scheduling and evaluate work practices, and (7) site-wide memorandum on significance of signatures has been written.

PREVIOUS SIMILAR EVENTS

LER 259/85010 - The control room operator received an erroneous alarm from the reactor building ventilation system. Compensatory samples were being taken until 2200 hours when maintenance personnel informed the RLA that the "as found" condition showed that two of the three channels were working properly. This interface led to the RLA prematurely suspending required sampling. The root cause of LER 259/85010 did not result in questionable documentation. Therefore, this event is not directly related to the March 1, 1991 event.

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LER 259/85046 - The sampling hose for the turbine building ventilation CAM was left disconnected during a source check test. The disconnected hose was discovered and reconnected. Even though the root cause of this event was personnel error, the corrective actions for LER 259/85046 were adequate for the event and did not contribute to the questionable documentation identified in the March 1, 1991 event.

LER 259/88010 - The chemistry section was notified that the reactor building closed cooling water heat exchanger was removed from service. At that time, the RLA presumed that the RCW to the heat exchanger was also isolated. Therefore, the RLA prematurely suspended sampling. This event did not contribute to the questionable documentation identified in the March 1, 1991 event.

LER 259/88041 - An RLA failed to perform a compensatory sample for the RCW system. The root cause was due to an inadequate shift turnover. The system was still out-of-service, and this piece of information was not discussed at the shift turnover. This previous LER did not address any questionable documentation; therefore, its corrective action appears adequate and did not contribute to the March 1, 1991 event.

LER 259/90005 - An RLA took two of three chemistry samples in a secondary location on the RCW system. This was due to the RLA not realizing that a third RCW heat exchanger was in service. The root cause of this event was failure to follow procedure. Documentation for this event was not in question, and the RLA notified his manager that he had not taken a required sample. Therefore, this event did not contribute to the March 1, 1991 event.

LER 296/90005 - A new reactor/turbine building ventilation exhaust monitor was being initially calibrated. At that time, the inlet valves to the monitor's sample lines were closed by instrument and calibration personnel thereby isolating a compensatory measure sample which was being taken off the monitor. The root cause was a poor design review for not installing a new upstream sample point when the old sample line piping was removed. A lack of a proper design review did not contribute to the March 1, 1991 event.

LER 259/91002 -A reactor/turbine building ventilation system effluent sample was missed. The sample assembly did not contain a particulate filter nor a charcoal cartridge from January 26, 1991 through February 1, 1991. The root cause was due to personnel error. This identifiable personnel error did not contribute to the March 1, 1991 event.

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COMMITMENTS

Chemistry compensatory SIs will be revised to incorporate sign-off spaces where chemical shift supervisors can initial that required compensatory measures have been met. These revisions will be completed by May 31, 1991.

An additional investigation of these missed work activities is in progress. If additional findings are identified that are contrary to what has been reported in this LER, TVA will provide a supplemental report.

Energy Industry Identification EIIS codes are identified in the text as [XX].