# TENNESSEE VALLEY AUTHORITY

6N 38A Lookout Place

JUN 09 1989

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

Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNIT 1 - DOCKET NO. 50-327 - FACILITY OPERATING LICENSEE DPR-77 - LICENSEE EVENT REPORT (LER) 50-327/89015

The enclosed LER provides details concerning a main control room isolation that resulted from a worn set of contacts in the 480-volt motor starter for the Train B main control room radiation monitor. This event is reported in accordance with 10 CFR 50.73, paragraph a.2.iv.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. R. Bynum, Vice President Nuclear Power Production

Enclosure cc (Enclosure):

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isolation (CRI) occurred. Operations personnel were alerted by Main Control Room (MCR) annunciators for a Train B CRI signal and a high radiation condition on MCR Train B ventilation intake radiation monitor (RM) 0-RM-90-126. MCR intake RMs 0-RM-90-125 (Train A) and O-RM-90-126 (Train B) monitor the discharge flow of control building normal pressurization fans that take suction from outside air and provide pressurization to various control building areas. Operations personnel confirmed that an actual high radiation condition did not exist by requesting Radiological Control personnel to sample MCR air inlet ventilation. The sample verified that an actual high radiation condition did not exist. Operations personnel recovered from the CRI in accordance with System Operating Instruction 30.1, "Control Building and Control Room Heating, Air Condition and Ventilation System." Work Request B265501 was issued to investigate the spurious high radiation signal generated from 0-RM-0-126 and found that the auxiliary contacts of the manual 480V motor starter were defective. As corrective action, Electrical Maintenance personnel replaced the 480 volt (V) motor starter and returned 0-RM-90-126 to service on May 19, 1989, at 1100 EDT. TVA considers the failure of the auxiliary contacts of the manual 480V motor starter to be an isolated event; however, this CRI will be reviewed as part of the Task Force established to evaluate ESF actuations as described in LER 1-89013.

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

#### DESCRIPTION OF EVENT

On May 13, 1989, at 0303, Eastern daylight time (EDT), with unit 1 in Mode 1 (100-percent power, 2235 pounds per square inch gauge [psig], 578 degrees Fahrenheit [F]), and unit 2 in mode 1, (98-percent power, 2235 psig, and 578 degrees F) a Train B control room isolation (CRI) (EIIS Code VJ) occurred. Operations personnel were alerted by main control room (MCR) annunciators for a Train B CRI signal (panel 0-M-27) and a high radiation condition on MCR Train B ventilation intake radiation monitor (RM) 0-RM-90-126 (EIIS, Code IL) (panel 0-M-12). MCR intake RMs 0-RM-90-125 (Train A) and 0-RM-90-126 (Train B) monitor the discharge flow of control building normal pressurization fans that take suction from outside air and provide pressurization to various control building areas during normal plant operations.

Upon discovery of the CRI, Operations personnel reviewed the strip chart recording for O-RM-90-126. The chart recording indicated spikes of approximately 2x10E<sup>4</sup> counts per minute (cpm) at the time of the event, which exceeded the RM trip setpoint of 350 cpm, and resulted in the CRI actuation signal. Operations personnel requested radiological control personnel to sample air inlet ventilation to ensure no high radiation condition existed. At 0436 EDT, radiological control notified operations that only naturally occurring radio isotopes were found in negligible quantities during the sampling. The radiation monitor was bypassed and operations personnel then recovered from the CRI in accordance with System Operating Instruction (SOI) 30.1, "Control Building and Control Room Heating, Air Conditioning and Ventilation System." Work request (WR) B265501 was issued to investigate the apparently spurious high radiation signal generated from 0-RM-90-126.

## CAUSE OF EVENT

An investigation of the spurious high radiation signal from O-RM-90-126 was performed by Instrument Maintenance (IM) and the system engineer. IM personnel with direction from the system engineer discovered that the auxiliary contacts of the manual 480 volt (V) motor starter were defective. These contacts are 120V and control the "power on" display lights. The contacts were not conducting properly and current was arcing over. This arc over could induce electromagnetic interference (EMI) into the circuitry and result in the initiation of a spurious high radiation signal, thus causing the CRI. The defective motor starter was replaced by Electrical Maintenance and a postmodification test (PMT) was performed. The cause of the contact failure was poor contact continuity because of normal aging, which would increase resistance eventually create the arcing, and induce EMI. Based on a review of past CRI events, this has not been a recurring problem and TVA considers this to be an isolated random occurrence.

#### ANALYSIS OF EVENT

A CRI is an engineered safety feature (ESF) actuation, which is reportable in accordance with 10 CFR 50.73, paragraph a.2.iv, as an unplanned actuation.

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Because it was verified that the CRI was not the result of an actual high radiation condition, there was no threat to control room personnel or the general public. All components performed as designed. The CRI was successfully recovered from by Operations personnel in accordance with SOI-30.1.

### CORRECTIVE ACTION

Immediate corrective action taken upon occurrence of the CRI consisted of Operations personnel requesting radiological control to verify that an actual high radiation condition did not exist and recovery from the CRI, in accordance with SOI-30.1. A WR was written EM personnel replaced the defective 480° motor starter contacts and performed the PMT. The RM was returned to service on May 19, 1989, at 1100 EDT.

TVA has monitored the chart recorder for O-RM-90-126 and spiking has not occurred since the 480v motor starter was replaced. The failure of the motor starter auxiliary contacts is considered to be an isolated occurrence based on review of the past CRI events. There is no further corrective actions planned at this time for this specific event. This event will be reviewed as part of the Task Force established to review ESF activities as described in LER 1-89013.

#### ADDITIONAL INFORMATION

There have been eight previously recorded CRIs resulting from spurious spiking from RMs,; however, none of these CRIs were found to have resulted from failure of a 480v motor starter contacts: SQR0-50-327/84004, /84039, /84062, /85021, /85037, /86060, /87043, and /89002.