LICENSEE EVENT REPORT (LER) Form Rev. 2.0

Facility Name (1)	Docket Number (2)	Page (3)
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Title (4)

SBGTS ESF Due To Dislodged Fuel Pool Radiation Monitor Bypass Switch Caused By Work On 902-2 Panel

Event Date (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)
0 1	2 5	9 2	9 2	-- 0 0 5	-- 0 1		0 7	0 8	9 7		0 5 0 0 0
											0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)			
2		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	0 0 0	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)
		20.405(a)(1)(iii)	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
Charles Peterson, Regulatory Affairs Manager, Ext. 3609	3 0 9 6 5 4 - 2 2 4 1

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
B	I L	D 2 1	G 0 8 0	N						

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)

ABSTRACT:

On January 25, 1992, at 1103 hours, Unit Two was in the REFUEL mode. During installation of a mounting plate on the 902-2 panel, the "A" Fuel Pool radiation monitor bypass switch [33] [IL] fell forward from the 902-10 panel, causing a short circuit and blowing the radiation monitor upscale trip relay fuse [FU]. This led to an initiation of the "A" train of Standby Gas Treatment System (SBGTS) [BH] and an isolation of the Reactor Building Ventilation System [VA]. The root cause of this event was the failure of the bypass switch mounting bracket due to vibrations. Immediate corrective actions included remounting the bypass switch, replacement of the upscale trip fuse, and the reestablishment of the Reactor Building Ventilation System and the shutdown of the "A" train of SBGTS. In addition to the immediate actions, the mounting bracket screws for the bypass switches of the Reactor Building Ventilation and Fuel Pool radiation monitors [MON] on each unit are being verified for tightness on a monthly basis during surveillance testing.

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2511 MWt rated core thermal power.

EVENT IDENTIFICATION: SBGTS ESF due to dislodged fuel pool radiation monitor bypass switch caused by work on 902-2 panel.

A. **CONDITIONS PRIOR TO EVENT:**

Unit: Two Event Date: January 25, 1992 Event Time: 1103
Reactor Mode: 2 Mode Name: Refuel Power Level: 00%

This report was initiated by Deviation Report D-4-2-92-015.

REFUEL (2) - In this position interlocks are established so that one control rod only may be withdrawn when flux amplifiers are set at the proper sensitivity level and the refueling crane is not over the reactor. Also, the trip from the turbine control valves, turbine stop valves, main steam isolation valves, and condenser vacuum are bypassed. If the refueling crane is over the reactor, all rods must be fully inserted and none can be withdrawn.

B. DESCRIPTION OF EVENT:

On January 25, 1991, at 1103 hours, Unit Two was in the REFUEL mode. An electrician was installing a mounting plate for the Area Radiation Monitoring System [IL] recorders [RR] on the 902-2 panel in the control room. During this installation, the "A" Fuel Pool radiation monitor calibration bypass switch (2-1701-313) and faceplate became dislodged from its mounting in the 902-10 panel and fell forward. During the fall, termination point three on the bypass switch came in contact with the 902-10 panel, thereby shorting the power feed to the "A" Fuel Pool radiation monitor upscale trip relay and blowing fuse 2-1701-703E. This caused a loss of power to the "A" Fuel Pool radiation monitor upscale trip relay, 2-1705-105, which in turn deenergized relay 2-1701-100A [94], initiating the "A" train of Standby Gas Treatment System (SBGTS) and isolating the Reactor Building Ventilation System. The electrician immediately remounted the calibration bypass switch in the 902-10 panel. The Shift Control Room Engineer (SCRE) and the Unit Two Nuclear Station Operator (NSO) investigated the event and found the electrician installing the switch. Work Request Q97614 was then written to repair the seismic mountings for the bypass switches.

An Instrument Maintenance (IM) technician tightened the four mounting screws for the bypass switch. The technician then proceeded to check the mounting of all other bypass switches in the panel. These switches showed no signs of loosening.

At 1155 hours, the Unit Two Equipment Operator (EO) replaced the 2-1701-703E fuse in the 902-40 panel. At 1200 hours, Reactor Building Ventilation was reestablished and the "A" train of SBGTS was shutdown.

At 1347 hours, the Shift Engineer (SE) made the required four hour Emergency Notification System (ENS) notification to comply with the requirements of 10CFR50.72(b)(2)(ii).

C. APPARENT CAUSE OF EVENT:

This event is being reported in accordance with 10CFR50.73(a)(2)(iv), which requires reporting of any event or condition that results in manual or automatic actuation of any Engineered Safety Feature (ESF).

The root cause of this event was the failure of the bypass switch mounting bracket due to vibrations resulting from previous and ongoing modification of the nearby 902-2 panel. The switches are classified as Seismic Category Class I components. These switches were in the original plant design and were not required to be seismically qualified. All new or replacement switches, however, are required to be seismically qualified. The installation of the mounting panel at the time of this event provided enough force to dislodge the switch. In the week preceding this event, the 902-2 panel was modified by grinding, drilling and sawing to accommodate new recorders for the Area Radiation Monitoring System. This work apparently loosened the switch face plate.

D. SAFETY ANALYSIS OF EVENT:

The safety consequences of this event were minimal. The resulting trip of the Reactor Building Ventilation System and the auto initiation of the "A" train of SBGTS were in a conservative direction. Under accident conditions, the safety consequences of this event would be unchanged.

E. CORRECTIVE ACTIONS:

The immediate corrective action was for the electrician to remount the bypass switch back in the 902-10 panel. IM Department technicians then tightened the switch mounting screws and checked the other bypass switches. At 1155 hours, the Unit Two EO replaced the 2-1701-703E fuse in the 902-40 panel. At 1200 hours, the Reactor Building Ventilation was reestablished and the "A" train of SBGTS was shutdown. At 1347 hours, the SE made the required four hour ENS phone call.

The electrician was counseled by his foreman to notify the SCRE and NSO if an abnormal condition occurs in the control room.

The mounting bracket screws for the bypass switches of the Reactor Building Ventilation and Fuel Pool radiation monitors [MON] on each unit are being verified for tightness on a monthly basis during surveillance testing (functional and calibration testing). In addition, an insulating sleeve is currently installed on the electrical terminations at the back of each bypass switch.

The replacement of the Reactor Building Ventilation and Fuel Pool radiation monitors, via Minor Design Changes P04-1(2)-92-009, was seen as the long-term corrective action to prevent recurrence since the mounting for the bypass switches in the 90X-10 panels would be upgraded. These design changes had been initiated to replace the existing radiation monitors (Reactor Building Ventilation and Fuel Pool) in order to address historical setpoint drift concerns. However, the design changes are no longer being pursued since the setpoint drift concerns have been alleviated.

The failure (dislodging) of the bypass switch mounting bracket was attributed to vibrations resulting from modification activities which were being performed on an adjacent panel (902-2 panel) to accommodate the installation of new recorders. Since the completion of those modification activities in 1992, no further mounting bracket failures have occurred, demonstrating that an upgrade of the mounting for the bypass switches is not necessary. As a result, the design changes, P04-1(2)-92-009, are being rescinded as a corrective action.

F. PREVIOUS EVENTS:

A search of previous deviation reports turned up no similar previous events. This event is not reportable to the Nuclear Plant Reliability Data System (NPRDS). A search of the Total Job Management (TJM) work history revealed no record of any work performed on these switches.

G. COMPONENT FAILURE DATA:

There were no specific component failures associated witn this event.