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10CFR50.73



Nuclear
Operations

May 10, 1991
NRC-91-0055

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

Reference: Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43

Subject: Licensee Event Report (LER) No. 91-006

Please find enclosed LER No. 91-006, dated May 10, 1991, for a reportable event that occurred on April 10, 1991. A copy of this LER is also being sent to the Regional Administrator, USNRC Region III.

If you have any questions, please contact Joseph Pendergast, Compliance Engineer, at (313) 586-1682.

Sincerely,

Enclosure: NRC Forms 366, 366A

cc: A. B. Davis
J. R. Eckert
R. W. DeFayette
W. G. Rogers
J. F. Stang

Wayne County Emergency
Management Division

FE22 11

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Fermi 2										DOCKET NUMBER (2) 0 5 0 0 0 3 4 1 1										PAGE (3) 1 OF 0 4									
TITLE (4) Balance of Plant Breaker Opened Causing Reactor Building Heating Ventilation and Air Conditioning Isolation																													
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 4	1 0	9 1	9 1	0 0 6	0 0	0 5	1 0	9 1						0 5 0 0 0															
OPERATING MODE (9) E			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)																										
POWER LEVEL (10) 1 0			20.402(b)					20.426(c)					<input checked="" type="checkbox"/> 50.73(a)(2)(v)					73.71(b)											
			20.406(a)(1)(i)					50.36(c)(1)					50.73(a)(2)(v)					73.71(c)											
			20.406(a)(1)(ii)					50.36(c)(2)					50.73(a)(2)(vi)					OTHER (Specify in Abstract Below and in Text, NRC Form 366A)											
			20.406(a)(1)(iii)					50.73(a)(2)(i)					50.73(a)(2)(vii)(A)																
			20.406(a)(1)(iv)					50.73(a)(2)(ii)					50.73(a)(2)(vii)(B)																
			20.406(a)(1)(v)					50.73(a)(2)(iii)					50.73(a)(2)(k)																
LICENSEE CONTACT FOR THIS LER (12)																													
NAME Joseph Pendergast, Compliance Engineer										TELEPHONE NUMBER 3 1 3 5 8 6 - 1 6 8 2																			
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																													
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC										
X	B, H	B, K, R	5 3 4 5	No																									
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)																			
YES (If yes, complete EXPECTED SUBMISSION DATE 'E')										<input checked="" type="checkbox"/> NO																			

ABSTRACT (Limit to 1400 spaces, i.e., approximately 1100 characters; space typewritten lines) (16)

At 0754 hours on April 10, 1991, a "Balance Of Plant" breaker which provides 120/208 VAC feed to distribution panel 72B-4C-1 opened. Division I of the Reactor Building Heating Ventilation and Air Conditioning (RBHVAC) system isolated, and Standby Gas Treatment System (SGTS) automatically started. The Control Center Heating Ventilation and Air Conditioning System (CCHVAC) received an isolation signal, however, it was already in the recirculation mode for surveillance testing.

The isolation/actuation signals were caused by component failure. Initial troubleshooting identified the main feed breaker in distribution panel 72B-4C-1 as the cause for the loss of power. The breaker was removed and electrically tested by simulating overload conditions; the X and Z phases tripped as expected. However, the Y phase indicated an open circuit. The breaker was opened for inspection. Contact degradation was determined to be the apparent cause for the Y phase opening. The breaker 72B-4C-1 was replaced.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545. A/D TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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YEAR SEQUENTIAL REVISION

NUMBER NUMBER NUMBER

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

Initial Plant Conditions:

Operational Condition: 5 (Refueling)
Reactor Power: 0 Percent
Reactor Pressure: 0 psig
Reactor Temperature: 82 degrees Fahrenheit

Description of Event:

At 0754 hours on April 10, 1991, the main feed breaker (BKR) in "Balance Of Plant" 120/208 VAC distribution panel (PL) 72B-4C-1 opened. This caused a loss of power to the Post Accident Sampling System (IP), the Reactor Building (NG) Stationary Particulate Iodine and Noble Gas (SPING) radiation monitor (MON) and various Fire Detection/Suppression CO2 control circuits (DET). Ultimately, the Reactor Building ventilation exhaust, the Control Center make-up air, and the Standby Gas Treatment System (SGTS) (BH) SPING radiation monitors became inoperable. Division I of the Reactor Building Heating Ventilation and Air Conditioning (RBHVAC) (VI) system isolated, and Standby Gas Treatment System (SGTS) (BH) automatically started. The Control Center Heating Ventilation and Air Conditioning System (CCHVAC) (VI) received an isolation signal, however, it was already in the recirculation mode for surveillance testing. The isolation/actuation of these systems occurred in response to the loss of power to the radiation monitors.

The opening of this breaker also removed power from several fire detection panels (PL). In accordance with section 9A.6 of the Updated Final Safety Analysis Report fire watches were established until power was restored.

The main feed breaker is a Square D FA type molded case circuit breaker, rated at 100 amps. This type of breaker has a permanent trip unit containing individual thermal and magnetic trip elements in each pole. When the breaker trips the operating handle assumes a center position. The operating handle of the breaker was found in the full "on" position. No voltage was present on the load side of the breaker. The breaker was reset and operated properly. At 1248 hours, RBHVAC and SGTS were returned to normal line-up to allow for proper Reactor Building atmospheric conditions during outage activities. Subsequently, the breaker was replaced.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH, (F-830), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 386A's) (17)

Cause of Event:

The isolation/actuation signals were caused by component failure. Initial troubleshooting identified the main feed breaker in distribution panel 72B-4C-1 as the source for the loss of power. It was difficult to place the breaker's operating handle in the "off" position and then move to the "on" position during trouble shooting. However, after being reset the breaker functioned normally.

The breaker was removed and electrically tested by simulating overload conditions; the X and Z phases tripped as expected. However, the Y phase indicated an open circuit. The breaker was opened for inspection. Contact degradation was determined to be the apparent cause for the Y phase opening. The cause of contact degradation could not be determined. It appears that the Y phase contacts may have been welded together thus accounting for the initial difficulty in resetting the breaker. The welded contacts would also explain why the breaker was found in the full closed position, but was still "open".

Analysis of Event:

The RBHVAC, CCHVAC and SGTS Engineered Safety Feature responses were consistent with the design basis of these systems. Had this occurred during plant operation these systems would have appropriately performed their safety related functions. Thus, this event did not decrease the ability of these systems to perform their safety design functions. As a result, this event had no impact on plant safety. Therefore, the health and safety of the public and plant employees was protected.

Corrective Actions:

A Nuclear Plant Reliability Data System (NPRDS) search was conducted for similar problems (i.e., contact degradation as described above) with molded case breakers. No similar problems were identified. The main feed breaker in distribution panel 72B-4C-1 was replaced.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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

Previous Similar Events:

This is the first Licensee Event Report at Fermi 2 where this type of breaker failure caused an Engineered Safety Feature isolation signal.

Failed Component Data:

The failed breaker was a 100 amp, Square D FA type molded case circuit breaker, part number FA36100. This particular breaker has no previous failure history.