

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9105290135 DOC.DATE: 91/05/20 NOTARIZED: NO DOCKET #
 FACIL:50-263 Monticello Nuclear Generating Plant, Northern States 05000263
 AUTH.NAME AUTHOR AFFILIATION
 ENGELKE,S. Northern States Power Co.
 PARKER,T.M. Northern States Power Co.
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 91-007-00:on 910419,electrical fault in bus switchgear
 automatically started EDG.Caused by personnel error.
 Conducted safety meetings w/groups,repaired damaged
 switchgear & provided training.W/910520 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 7
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:NRR/LONG,W.

05000263 A

RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
PD3-1 LA	1 1	PD3-1 PD	1 1
LONG,B.	1 1		
INTERNAL: ACNW	2 2	AEOD/DOA	1 1
AEOD/DSP/TPAB	1 1	AEOD/ROAB/DSP	2 2
NRR/DET/ECMB 9H	1 1	NRR/DET/EMEB 7E	1 1
NRR/DLPQ/LHFB11	1 1	NRR/DLPQ/LPEB10	1 1
NRR/DOEA/OEAB	1 1	NRR/DREP/PRPB11	2 2
NRR/DST/SELB 8D	1 1	NRR/DST/SICB8H3	1 1
NRR/DST/SPLB8D1	1 1	NRR/DST/SRXB 8E	1 1
REG FILE 02	1 1	RES/DSIR/EIB	1 1
RGN3 FILE 01	1 1		
EXTERNAL: EG&G BRYCE,J.H	3 3	L ST LOBBY WARD	1 1
NRC PDR	1 1	NSIC MURPHY,G.A	1 1
NSIC POORE,W.	1 1	NUDOCS FULL TXT	1 1

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,
 ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION
 LISTS FOR DOCUMENTS YOU DON'T NEED!

FULL TEXT CONVERSION REQUIRED
 TOTAL NUMBER OF COPIES REQUIRED: LTTR 31 ENCL 31

AD 4/wb



Northern States Power Company

414 Nicollet Mall
Minneapolis, Minnesota 55401-1927
Telephone (612) 330-5500

May 20, 1991

Report Required by
10 CFR Part 50, Section 50.73

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Personnel Error Causes 4KV Electrical Fault Resulting
in Automatic Start of Diesel Generator

The Licensee Event Report for this occurrence is attached.

This event was reported via the Emergency Notification System in accordance with 10 CFR Part 50 Section 50.72 on April 19, 1991.

Thomas M Parker
Manager
Nuclear Support Services

c: Regional Administrator - III NRC
Sr Resident Inspector, NRC
NRR Project Manager, NRC
MPCA
Attn: Dr J W Ferman

Attachment

9105290135 910520
FDR ADDCK 05000263
S FDR

1E27

EXPIRES: 4/30/92

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-510), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

MONTICELLO NUCLEAR GENERATING PLANT

DOCKET NUMBER (2)

0 5 0 0 0 2 6 3

PAGE (3)

1 OF 0 6

TITLE (4)

Personnel Error Causes 4KV Electrical Fault Resulting in Automatic Start of Diesel Generator

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	9	9	1	0	0	7	0	0	0	5	2	0	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)

20.402(b)

20.405(e)

X

50.73(a)(2)(iv)

73.71(b)

POWER LEVEL (10)

0 0 0

20.405(a)(1)(i)

50.73(a)(1)

50.73(a)(2)(v)

73.71(a)

20.405(a)(1)(ii)

50.73(a)(2)

50.73(a)(2)(vi)

OTHER (Specify in Abstract below and in Text, NRC Form 356A)

20.405(a)(1)(iii)

50.73(a)(2)(i)

50.73(a)(2)(vii)(A)

20.405(a)(1)(iv)

50.73(a)(2)(ii)

50.73(a)(2)(vii)(B)

20.405(a)(1)(v)

50.73(a)(2)(iii)

50.73(a)(2)(ix)

LICENSEE CONTACT FOR THIS LER (12)

NAME

TELEPHONE NUMBER

AREA CODE

Stephen Engelke, Supt, Electrical & Instrumentation Engineering

6 1 2 2 1 9 5 1 - 1 1 3 1 2 1 9

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

YES (If yes, complete EXPECTED SUBMISSION DATE)

X NO

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

During a refueling outage, an electrical fault in 4160 Volt bus 11 switchgear caused the normal offsite power source, 2R Station Transformer, to lockout and transfer plant power to the 1AR Reserve Transformer. The transfer of power automatically started 12 Emergency Diesel Generator.

The cause of the event was personnel error by electric maintenance technicians. While performing bus maintenance, one technician mistakenly entered a breaker cubicle that contained energized stabs from 2R Station Transformer. The technician contacted the energized stabs causing the fault and sustaining severe burns. Corrective actions include conducting safety meetings with all work groups, repairing the damaged switchgear, forming an Investigative Team to formally review this event, and providing training.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Monticello Nuclear Generating Plant	DOCKET NUMBER (2) 0 5 0 0 0 2 6 3	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 1	- 0 0 7	- 0 0	0 2	OF	0 6

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

DESCRIPTION

At 1257 CST on April 19, 1991 with the reactor in cold shutdown for a refueling outage, a 4160 Volt electrical fault on bus 11 switchgear (EIIS Component Identifier: SWGR) tripped the 2R Station Transformer (EIIS Component Identifier: XFMR). At the time, the 2R transformer was supplying power to essential bus 16 (EIIS Component Identifier: BU) and the 2R trip initiated a transfer of bus 16 electrical loads to the 1AR Reserve Transformer. The momentary loss of power to bus 16 automatically started 12 Emergency Diesel Generator (EIIS Component Identifier: DG) which is an automatic actuation of an Engineered Safety Feature and reportable under 10 CFR Part 50, Section 50.73(a)(2)(iv).

The 4160 Volt electrical fault caused an overcurrent and sudden pressure lockout of 2R Station Transformer. The fault damaged 152-101 cubicle and movable breaker (EIIS Component Identifier: BKR) which was positioned directly in front of 152-101 cubicle. Per plant design, essential bus 16 transferred to 1AR Reserve Transformer in five seconds to restore fuel pool cooling and other important plant functions. At the time of the event, 11 Emergency Diesel Generator, 1R Station Transformer and 4160 Volt buses 11, 13 and 15 were removed from service for maintenance. The attached figure shows plant 4160 Volt electrical distribution. Nonessential buses 12 and 14 do not automatically transfer to 1AR Reserve Transformer and therefore lost power when 2R Station Transformer tripped. Bus 12 was unloaded at the time of the event. At 1930 CST on April 19, bus 14 was reenergized from bus 16 in order to restore nonessential loads on bus 14.

At the time of the event, electrical maintenance was being performed by technicians on 4160 Volt bus 11. Preventive maintenance procedure 4858-50PM "4KV Bus Maintenance" called for a double test on bus 11. In the process of performing this test, the technician entered the 2R source breaker cubicle 152-101 to bus 11 which contained energized stabs from 2R Station Transformer. As the technician was attempting to check bus continuity, a fault was generated in breaker 152-101. The technician sustained severe burns to his body and was hospitalized in critical condition. The injured technician was not radioactively contaminated.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (8)

PAGE (3)

Monticello Nuclear Generating Plant

0 5 0 0 0 2 6 3

YEAR

SEQUENTIAL
NUMBERREVISION
NUMBER

9 1

— 0 0 7 —

0 0

0 3

OF

0 6

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

CAUSE

The root cause as determined by the Investigative Team formed to review this incident is personnel error by the electric maintenance technicians.

One journeyman technician and one apprentice technician were assigned the task of double testing buses 11, 13 and 15. Bus 11 consists of two source breakers and two load breakers (see attached figure). The two source breakers, 152-101 and 152-102, provide power to the bus from either 2R or 1R Station Transformer respectively. The two load breakers, 152-103 and 152-104, provide power to 11 recirculation pump and 11 feedwater pump respectively. At the time of the event, bus 11 was deenergized with all breakers open and 1R Station Transformer was deenergized. All stabs in breakers 152-102, 152-103 and 152-104 were deenergized. Breaker 152-101 had a set of stabs energized because 2R was energized to supply plant power. The buses were properly isolated and the isolation had been reviewed with the technicians the morning of the event.

The technicians had completed double testing on buses 13 and 15. To double test bus 11, the test equipment had been setup in breaker 152-104 (11 feedwater pump). In each 4160 Volt breaker cubicle there are two sets of stabs. One set of stabs are connected to the bus and the other set are either connected to the load or to the source depending on the function of the breaker. It is a common practice when double testing a bus to check continuity between the stabs of two breaker cubicles to positively determine which stabs are connected to the bus (top or bottom stabs). In doing this continuity check, the technicians mistakenly selected a source breaker cubicle containing energized stabs from 2R Station Transformer. The breaker cubicle 152-101 (2R Source) had a breaker in the cubicle in the disconnect position. The journeyman technician removed the breaker and entered the cubicle to do the continuity check without first checking to ensure the 4160 Volt stabs were deenergized per recommended safety practices.

There were no unusual characteristics of the work location that directly contributed to the error. The personnel error was a cognitive error involving failure to select a deenergized breaker cubicle and failure to check for energized 4KV stabs.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Monticello Nuclear Generating Plant	DOCKET NUMBER (2) 0 5 0 0 0 2 6 3	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 1	0 0 7	0 0	0 4	OF	0 6

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

ANALYSIS

At the time of the event, the reactor was in cold shutdown and the core was off loaded to the fuel pool. Three sources of power were available to the plant from 2R Station Transformer, 1AR Reserve Transformer and 12 Emergency Diesel Generator. The loss of 2R Station Transformer initiated a transfer to 1AR Reserve Transformer within five seconds and automatically started the 12 Emergency Diesel Generator which remained in standby. The fault was properly cleared by protective relaying and at no time was the plant in jeopardy of losing offsite power. The emergency diesel generator was available for backup plant power. Electrical service to all equipment needed to protect the health and safety of the public was maintained by transfer of essential bus 16 to 1AR Reserve Transformer.

The double testing is administratively controlled to be done only when reactor temperature is less than 212 F. Plant policy during outages is to maintain at least two offsite sources of power to the plant and one emergency diesel generator. Therefore, this event could not have had more severe consequences because this work is only done during outages and backup sources of power are maintained.

CORRECTIVE ACTION

1. As a result of this event, safety meetings were held with all appropriate plant and corporate departments to discuss this event, reemphasize the importance of safety and to look for feedback on ways to improve safety.
2. The equipment damage caused by the fault has been repaired, tested and returned to service. Adjacent equipment has been tested to confirm that damage was limited to breaker 152-101.
3. A formal Investigative Team has been established to thoroughly investigate this event and develop recommendations which will be implemented as appropriate.
4. This event will be covered in engineering, operations, and electric maintenance department continuing training.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BUREAU ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Monticello Nuclear Generating Plant	0 5 0 0 0 2 6 3 9 1	—	0 0 7	—	0 0	0 5	OF 0 6

TEXT (If more space is required, use additional NRC Form 365A's) (17)

ADDITIONAL INFORMATION

Failed Component Identification

None.

Previous Similar Events

None.

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 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (8)

PAGE (3)

Monticello Nuclear Generating Plant

0 5 0 0 0 2 6 3 9 1 - 0 0 7 - 0 0 0 6 OF 0 6

TEXT (If more space is required, use additional NRC Form 365A's) (17)

