

Omaha Public Power District  
444 South 16th Street Mall  
Omaha, Nebraska 68102-2247  
402/636-2000

April 23, 1992  
LIC-92-095R

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Station P1-137  
Washington, DC 20555

References: 1. Docket No. 50-285  
2. Letter from OPPD (W. G. Gates) to NRC (Document Control Desk)  
dated November 11, 1991 (LIC-91-305R)

Gentlemen:

SUBJECT: Losses of 161 kV System Since March 1989

During a discussion of Reference 2 (application to amend the operating license concerning 161 kV restrictions), Mr. Frank Ashe of the NRC technical staff asked if information existed to demonstrate the reliability of the 161 kV power source and the fast transfer function for Fort Calhoun Station.

Omaha Public Power District (OPPD) suggested, and Mr. Ashe agreed to, OPPD researching the issue for the preceding three years. OPPD has determined that three forced outages for the 161 kV power source have occurred since March 1989 for Fort Calhoun Station. After each forced outage, a successful fast transfer of the 161 kV power source occurred. Attachment A is the requested information that demonstrates reliability of the 161 kV power source and the fast transfer function. Attachment B is copies of the Fort Calhoun Station Control Room Log for the days in question.

If you should have any questions, please contact me.

Sincerely

*W. G. Gates*

W. G. Gates  
Division Manager  
Nuclear Operations

WGG/sel

c: LeBoeuf, Lamb, Leiby & MacRae  
D. L. Wigginton, NRC Senior Project Manager  
S. D. Bloom, NRC Project Engineer  
R. D. Martin, NRC Regional Administrator, Region IV  
R. P. Mullikin, NRC Senior Resident Inspector

9204300299 920423  
PDR ADOCK 05000285  
P PDR

1001  
111

FORCED OUTAGES OF THE 161 kV SYSTEM FROM MARCH, 1989 TO PRESENT

At this time, there is one 161 kV circuit feeding Fort Calhoun Station (FCS). That circuit (1588) is fed from Substation 1226. There are two 161 kV circuits which feed Substation 1226. Neither of these two circuits have experienced a forced outage since 1982. Additionally, a reliability study was conducted in March 1989. The study concluded that the from 1973 through March 1989, the reliability of Circuit 1588 was 99.8%.

1. DATE: March 4, 1989  
STATUS: Unit at mode 1.  $T_c = 540.8^\circ$ .  
EVENT: Fault on 161 kV Circuit 1588 connecting Substation 1226 to the Fort Calhoun Station Switchyard. This fault occurred during a winter storm when the transmission line suffered the loss of several structures.  
FAST TRANSFER: Successful. Safeguards buses 1A3 and 1A4 successfully fast transferred to the 345 kV power feed.  
EFFECT: No unit trip occurred.  
161 kV OUTAGE DURATION: 6 Days, 7 Hours, 10 Minutes  
ADDITIONAL INFO: The fault on the 161 kV line occurred during a snow/ice storm with winds greater than 30 mph.  
CLASSIFICATION: Category: Operational  
Specific: Line Material Failure
  
2. DATE: June 20, 1991  
STATUS: Unit at Mode 1.  $T_c = 540.5^\circ$  F.  
EVENT: Lost due to trip of Breaker 111. Lockout relay 86/T1A-4 tripped and locked out.  
FAST TRANSFER: Successful. Safeguards buses 1A3 and 1A4 successfully fast transferred to the 345 kV power feed.  
EFFECT: No unit trip occurred.  
161 kV OUTAGE DURATION: 2 Hours, 43 Minutes  
ADDITIONAL INFO: Investigation revealed that the Transformer T1A4 Lockout Relay (86/T1A-4) tripped due to a spurious oil pressure relay operation. System Operations reset the pressure relay. The 86/T1A-4 relay was reset and the plant was returned to a normal electrical line up.  
CLASSIFICATION: Category: Equipment Related  
Specific: Accidental Tripping (relaying)

3. DATE: November 30, 1991

STATUS: Unit at Mode 1.  $T_c = 540^\circ \text{ F}$ .

EVENT: A broken insulator that was to be repaired is believed to have caused a fault of the 161 kV system approximately 15 minutes prior to a scheduled outage. See additional information below.

FAST TRANSFER: Successful. Safeguards buses 1A3 and 1A4 successfully fast transferred to the 345 kV power feed.

EFFECT: No unit trip occurred.

161 kV OUTAGE  
DURATION: 7 Hours, 36 Minutes.

ADDITIONAL INFO: The equipment failure (broken insulator) is believed to have been caused by a snow and ice storm the previous day. The insulator was repaired during the outage.

CLASSIFICATION: Category: Equipment Related  
Specific: Line Material Failure

Time	Call	STATION	LOCATION	DAY	DATE	3-Y	19 95	Operator
0815	TO - FROM	CAVIT STATUS		SATURDAY				Substrate
0830		CONDENSER						Operator
0853		CONDENSER						Operator
0915		CONDENSER						Operator
0937		CONDENSER						Operator
1028		CONDENSER						Operator
1159		CONDENSER						Operator
1210		CONDENSER						Operator
1250		CONDENSER						Operator
1300		CONDENSER						Operator
1310		CONDENSER						Operator
1320		CONDENSER						Operator
1330		CONDENSER						Operator
1340		CONDENSER						Operator
1350		CONDENSER						Operator
1400		CONDENSER						Operator
1410		CONDENSER						Operator
1420		CONDENSER						Operator
1430		CONDENSER						Operator
1440		CONDENSER						Operator
1450		CONDENSER						Operator
1500		CONDENSER						Operator
1510		CONDENSER						Operator
1520		CONDENSER						Operator
1530		CONDENSER						Operator
1540		CONDENSER						Operator
1550		CONDENSER						Operator
1600		CONDENSER						Operator
1610		CONDENSER						Operator
1620		CONDENSER						Operator
1630		CONDENSER						Operator
1640		CONDENSER						Operator
1650		CONDENSER						Operator
1700		CONDENSER						Operator
1710		CONDENSER						Operator
1720		CONDENSER						Operator
1730		CONDENSER						Operator
1740		CONDENSER						Operator
1750		CONDENSER						Operator
1800		CONDENSER						Operator
1810		CONDENSER						Operator
1820		CONDENSER						Operator
1830		CONDENSER						Operator
1840		CONDENSER						Operator
1850		CONDENSER						Operator
1900		CONDENSER						Operator
1910		CONDENSER						Operator
1920		CONDENSER						Operator
1930		CONDENSER						Operator
1940		CONDENSER						Operator
1950		CONDENSER						Operator
2000		CONDENSER						Operator
2010		CONDENSER						Operator
2020		CONDENSER						Operator
2030		CONDENSER						Operator
2040		CONDENSER						Operator
2050		CONDENSER						Operator
2100		CONDENSER						Operator
2110		CONDENSER						Operator
2120		CONDENSER						Operator
2130		CONDENSER						Operator
2140		CONDENSER						Operator
2150		CONDENSER						Operator
2200		CONDENSER						Operator
2210		CONDENSER						Operator
2220		CONDENSER						Operator
2230		CONDENSER						Operator
2240		CONDENSER						Operator
2250		CONDENSER						Operator
2300		CONDENSER						Operator
2310		CONDENSER						Operator
2320		CONDENSER						Operator
2330		CONDENSER						Operator
2340		CONDENSER						Operator
2350		CONDENSER						Operator
2400		CONDENSER						Operator
2410		CONDENSER						Operator
2420		CONDENSER						Operator
2430		CONDENSER						Operator
2440		CONDENSER						Operator
2450		CONDENSER						Operator
2500		CONDENSER						Operator
2510		CONDENSER						Operator
2520		CONDENSER						Operator
2530		CONDENSER						Operator
2540		CONDENSER						Operator
2550		CONDENSER						Operator
2600		CONDENSER						Operator
2610		CONDENSER						Operator
2620		CONDENSER						Operator
2630		CONDENSER						Operator
2640		CONDENSER						Operator
2650		CONDENSER						Operator
2700		CONDENSER						Operator
2710		CONDENSER						Operator
2720		CONDENSER						Operator
2730		CONDENSER						Operator
2740		CONDENSER						Operator
2750		CONDENSER						Operator
2800		CONDENSER						Operator
2810		CONDENSER						Operator
2820		CONDENSER						Operator
2830		CONDENSER						Operator
2840		CONDENSER						Operator
2850		CONDENSER						Operator
2900		CONDENSER						Operator
2910		CONDENSER						Operator
2920		CONDENSER						Operator
2930		CONDENSER						Operator
2940		CONDENSER						Operator
2950		CONDENSER						Operator
3000		CONDENSER						Operator
3010		CONDENSER						Operator
3020		CONDENSER						Operator
3030		CONDENSER						Operator
3040		CONDENSER						Operator
3050		CONDENSER						Operator

OMAHA PUBLIC POWER DISTRICT  
OMAHA, NE 68134

DATE: SATURDAY  
DAY: 3-Y  
19 95

Operator: SA SKELES

Shift Supervisor: PH W. [Signature]

GA SECURA  
FEDERATION  
INITIALS: [Signature] DATE: 5/1/95



OMAHA PUBLIC POWER DISTRICT  
OMAHA, NEBRASKA

DATE NOVEMBER 30  
DAY SATURDAY

RA 55  
55  
55  
55

STATION UNIT #1 LOCATION

Time	Call To - From	Equipment or Circuit	Descriptive Remarks
2325		PLANT STATUS VCT	MODE 1, ARO, POWER AT 1495.7 MW, TG = 340° Added Hz
0030		OP-SPS-2	Completed ST
0038		OP-SPS-10 (ATTN-4)	UNSAT due to 60V-9A70 (Get from to heater 47) failing to start, wind
0040			Submitted
0122		Condensers	To Backwash
0135		OP-SPS-0005	Completed ST
0209		CH-49	Started to receive 50-11A per 490 SA 1/2A - A-2
0244		SI-6A ST-60	Shutted SI-6A to ST-60 To clear low pressure alarm on ST-60
0245		Condensers	To Normal
0305		CH-11A	Transpiper near ACP-5.3 1/2A A-2 A-2, Secured Beaker S-H-4A
			CH-11A Commissioning 3.71
			Static Check Complete
0411	REC - NRS	EMS Phase	4160 VOLT BUSSES 1A9 AND 1A4 FIRST TRANSFERRED TO = 415 KV, returned 408-31
0620		EAST TRANSFER (41KV)	TRANSFERRED FROM 41KV TO 415KV
0630		1055 41 KV	Shutdown - had Auto started when busse 1A3 & 1A4 first transferred
0435		ST-6A	INFORMED OF LOSS OF 41 KV
0438	0438 - SA	PLANT MANAGER	OPERATED SYSTEM OPS PERFORMS RES. OF LOSS OF BULK LINE - RESTORATION APPROXIMATELY 2 HRS.
0439		345 KV Bus (947)-4 5KE	POWERED FROM 41 KV. DUE TO ST-6A-1 SYSTEM OPS W/OPS-51 EXITED AT 5-51.
0441		BUS 1A AND 1A3	INFORMED AT LOSS OF 41
0442	0442 - SS	Duty Supervisor Notification	INFORMED OF PLANT STATUS LOSS OF 41KV AND RESTORATION
0443	0443 - SS	Service Requester with (41KV) notification	INFORMED FROM 41KV TO 415KV. DUE TO RESTORATION OF BUSES 1A3 AND 1A4 TO 41 KV
0444		TECH. SUPER. B. Z. GAIN	CLEARER FROM 41KV TO 415KV. DUE TO RESTORATION OF BUSES 1A3 AND 1A4 TO 41KV
0445		41KV PHASE INFORMATION OF 41KV 410	AS FOLLOWS: Fw-4A, EE-2G-1A, 71B-3D, VA-SAB (Bubble No.), CF-7B, EE-56
0550		OP-27-6C-3001	Completed; Term. Leases 0.860 gpa, Unknown 0.896 gpa
0611			Released, Power line has been disconnected by system ops
0726		3451-4 BFR	
0730		Plant Status	MODE 2 1495.8 MW, TG = 340.0° ARO
0850	F. S. SS from "NRS"	41KV 411 Outage	Phil Hassell called to inquire about notification of the Terminal Office about the 41KV Outage
0840	Phil Hassell / S.S.	Plant Manager	Identified of the above entry - Phil Hassell's interest in 41KV Outage
0853		CONDENSERS	TO BACKWASH
1014		CONDENSERS	TO NORMAL
1151		OPR # 91077	OP while investigating a possible CIRC valve packing leak in Room 61 (Condensate 08-11)
1247		CA-9B	En Service to get Chemistry Sample
1227		PH-9B	Out of Service
1232		CPR	Release 91077 Started
1302		AC-104	Started, 5 inches AC-104
1308		453-1040	Upgraded 453-104, installed in preparation for incoming 41KV service.

Slitt Supervisor

1117 J. B. B...

1731 Church & Lake

(8-11)

OMAHA PUBLIC POWER DISTRICT

OMAHA, NEBRASKA

Page 2

DAY SATURDAY

DATE November 30

STATION

UNIT #1

LOCATION

Time	Call To - From	Equipment or Circuit	Descriptive Remarks	
1305	SS Duty Sup	Notification	Duty Supervisor notified Phil Havel who will notify NRC Region 4 of our impending 161 KV outage	YES H2 YES L1
1530		Plant Status	Made 1, Tc = 540°F, ARO, 1495 MW	
1537		161 KV	FAST TRANSFER TO 27 KV	
1537		DC BUS #2	Referenced REP-31 94-S-161 PWS	
1543		CW-1C	GROUND Reference 2 ARP - Ref #2922 MW# 910450	HAI
1557		Break III	OFF. To reduce loading on Bus 1A3 and 245KV. Close 'F' River Gate.	ANI
1601	NRC (BO) - SS	Notification	Opened for Sys. Ops. Hold order #91-619. For repairs of 161KV line.	HRE
1605		ARP-21	NRC notified of loss of 161KV and 161KV outage.	BOC PSI
1605			Anticipated deviation for ARP-31 for starting PW-5A due to CW-1C being shutdown and PW-5A being emergency run only at Lake	
1605			Notification of report to NRC	
1633			Notification of report to NRC	
1633			Notification of 161KV outage. Deviation from ARP-31 and NRC notification.	
1703	CA NRC	ENS Dms	Verification of 1601 notification and T.S. time limits.	
1705		6-1	Increased to 125 minutes logging	
1705		94-S-161	Reset	
2120		S.T.T.'s	Slowed from SI-4B to SI-4D to clear low pressure alarm	
2305		Breaker III	USED	
2313		BUS 1A4 AND 1A3	TRANSFERRED TO 161KV	

Shift Supervisor

(11-7)

(7-3)

Charles A. Culver

(3-11)

St. Lake

Operator  
DAY Thursday  
Descriptive Remarks  
Page #2

Call To From	Equipment or Circuit	Descriptive Remarks
T Ashim/Carlson	DB-1 NRC One Hour Notification CMP 4168 1/2 blow-down 161KV	Started to prove operability Shut down Completed per T.S. 2.7 (2) b. RESULTS: REJA: 52.58 e-4 gal/min Reduced to 25 Klbm/hr on each 5/6. Shift Chemist informed. Mat. Feed Region 4 of 161KV Pwr degradation due to problem with T1A-4 entry made by M. Keller & A. Beebe DENATED Filom AOP-31, Step 3.3 a Due to OPLS CONCERN SAT SHIFT SUPERVISOR DIRECTION.
R2 Simon/T. Miller	Containment AOP-31 Generator Containment Reasons January T1A4 OP-ST-RPS-0005 Roke III AOP-31 DB-2 FW-8C RX PWRVP SWR Rollup Door Single Rollup Door SWR Rollup Door Containment CW-6B Single Rollup Doors SWR Rollup Door	Loved Generator Meters +50 per AOP 31 considerations Beebe exited, Allen if he entered with Rollye. John Smith Sense His Forearm. Local First Aid is all that was required. T1A4 PRESSURE RELAY RESET BY SYSTEM PROTECTION, 86/T1A4 RESET. Completed, Adjusted to 55.3% Closed to restore 161KV Restarted ELECTRICAL UNCLIP to normal 161 to Bus 344 Exit Procedure due to normal electrical lineup. Cleared FS. LCO 2.7 (2) b. Shut down. STARTED, (W-8C) FW-8A STOPPED 9:20. 88 (WIND) METV AS ON 1200 TODAY. OPEN, L-C-3 (HAM) THE FIREWATER OPEN, M. Cavanaugh is Fire Watch Closed, Mike Cavanaugh FIREWATER SECURED. All personnel OUT SUPPLIED BY HOT WATER. All doors shut All fire watches secured Open, STANK CHAMBER IS THE FIREWATER Completed per 10CFR 50.70 (b)(2)(ii). Activation of ESF (DB-2 started) which is a four hour report, also reported that activation of T1A-4 (4.8 mts) occurred as a result of a relay being inadvertently tripped by an electronic troubleshooting ground Closed Front Chemist Fire watch to <del>Backwash</del> NORMAL Complete (7:45) Completed SAT, IN IN OOR: Opro, only OOR 12.56p. TO BACKWASH. STARTED IN ORDER TO LEASE BLOWDOWN TANK; HOT Level ALARM STARTED.
LATE ENTRY To Max Kason, Tom Adams	OP-ST-415-0001 OP-ST-4E-0001 SWR HALF A CONTAINMENT FD-37A FW-31B	Completed per 10CFR 50.70 (b)(2)(ii). Activation of ESF (DB-2 started) which is a four hour report, also reported that activation of T1A-4 (4.8 mts) occurred as a result of a relay being inadvertently tripped by an electronic troubleshooting ground Closed Front Chemist Fire watch to <del>Backwash</del> NORMAL Complete (7:45) Completed SAT, IN IN OOR: Opro, only OOR 12.56p. TO BACKWASH. STARTED IN ORDER TO LEASE BLOWDOWN TANK; HOT Level ALARM STARTED.

CA Record  
PERMANENT RETENTION  
DATE 06/20/91

Shift Supervisor P-1 Charles J. Calver (P-1)