Pike County Light & Power Co.

Pike County Light & Power Co.
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December 24, 2015

REGULAR MAIL
Honorable Rosemary Chiavetta
Secretary
Commonwealth of Pennsylvania
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17105-3265

Re: Request for Exclusion of Major Outage for Reliability Reporting Purposes

Dear Secretary Chiavetta:

By this letter, Pike County Light & Power Company ("PCL&P" or the "Company") sets forth a 'Request For Exclusion Of Major Outage For Reliability Reporting Purposes', in accordance with the Pennsylvania Public Utility Commission ("PAPUC") Order entered May 11, 2004 at M-00991220.

This request relates to an interruption to PCL&P customers that occurred on December 5, 2015. This incident meets the 10% customer threshold identified in Pa. Code §57.192, and was the result of an unexpected mechanical failure of a 69 kV transmission strain bus in Orange and Rockland Utilities, Inc.'s Shoemaker Substation.

As a result, 4,540 customers were interrupted. The event affected the entire PCL&P electric service territory. Since the number of customers affected exceeds the criteria for exclusion, PCL&P respectfully requests that this interruption be accepted as a Major Event.

Sincerely,

John L. Carley

John L. Carley
Assistant General Counsel

APPENDIX D

REQUEST FOR EXCLUSION OF MAJOR OUTAGE FOR
RELIABILITY REPORTING PURPOSES TO
PENNSYLVANIA PUBLIC UTILITY COMMISSION
P O BOX 3265
HARRISBURG, PA 17105-3265

Reports require an original and one copy to be filed with the Secretary's Bureau.

Information Required:

1. Requesting Utility: Pike County Light & Power Company ("PCL&P")
   Address: One Blue Hill Plaza
   Pearl River, NY 10965

2. Name and title of person making request:

   Brian Nugent (*Name*) — Section Mgr. - Electric Reliability Support (*Title*)

3. Telephone number: 845-577-3691

4. Interruption or Outage:

   (a) Number of customers affected: 4,540 Customers Affected
   Total number of customers in service territory: 4,540 Customers Served

   (b) Number of trouble locations in each geographic area affected listed by county and local political subdivision:

   There was a single trouble location within Orange and Rockland Utilities, Inc.'s ("O&R") Shoemaker Substation in Middletown, N.Y. that affected all of PCL&P's customers.

(c) Reason for interruption or outage, including weather data where applicable:

At approximately 1920 hours on December 5, 2015, a 69 kV transmission strain bus (i.e., a flexible, stranded conductor which is strung between substation metal structures and held by suspension-type insulators) in the Shoemaker Substation experienced a mechanical failure. The failed bus conductor swung downward, first making contact with a ground point and then (almost simultaneously) with another 69 kV bus. These points of contact resulted in the operation of bus differential relays for both busses within the Shoemaker 69 kV yard and the complete loss of transmission service out of the station, which had the cascading impacts described below. O&R has sent the compromised portion of the Line 24 strain bus to a metallurgist for a forensic analysis to determine what caused the equipment failure. Results are expected by the end of January and will be provided to the Pennsylvania Public Utility Commission when available.

This event resulted in the extended loss of 13 distribution substations fed from the Shoemaker Substation and two additional substations tied to the Shoemaker Substation through the transmission system, including those that feed PCL&P's customers. Weather conditions at the time were clear and cool (40° F).

(d) The number of utility workers and others assigned specifically to the repair work:

6 – Substation & Relay crews
10 – Overhead electric construction crews
2 – Overhead Troubleshooter crews
8 – Field Supervisors
3 – Managers (field and control room)
2 – Control Room Operators
1 – Division Engineer

(e)	The date and time of the first notification of a service interruption:	12/5/2015 7:22 p.m.
(f)	The actual time that service was restored to the last affected PCL&P customer:	12/6/2015 1:51 a.m.

Remarks

Introduction

The loss of Shoemaker Substation is unique for O&R in that O&R has rarely experienced an event with such far reaching impacts. With the exception of the blackout of 2003, few events have impacted greater than 5,000 customers at one time, and no single event in the past 25 years has impacted this many O&R and PCL&P customers at one time (exclusive of substantial weather events / major storms).

Analysis

Line 24 (69 kV Transmission Feeder from the Shoemaker Substation to the Sugarloaf Substation) is normally connected to Bus X at the Shoemaker Substation. On December 5, 2015 at 1920 hours the Line 24 Phase-C strain bus broke and made contact with Phase-B and Phase-C on Bus Y and ground. This caused a Phase-C to ground fault on Bus X and Phase-BC to ground fault on Bus Y. The bus differential relays for Bus X and Bus Y operated per design and energized the respective lockout (LOR) relays which then tripped the associated breakers and de-energized Shoemaker substation. This resulted in the loss of 69 kV Lines 24, 25, 119, 120, 11, 12, 13 and 14; and loss of transmission Banks 711, 811, and distribution Bank 311.

The Shoemaker Substation is predominantly a transmission station that directly feeds 69 kV transmission lines: 11, 12, 13, 14, 24, 25, 119 and 120. The loss of these transmission feeds to other substations cascaded into the additional loss of the entire Western Division 69 kV loop including transmission lines: 9, 10, 15, 18, 122 and 131. Following the loss of the 69 kV loop, the low voltage side of Banks 711 and 811 opened up to isolate the 138 kV system from the 69 kV system at Shoemaker. The loss of power to that portion of the transmission system resulted in the following stations losing power: Shoemaker, Cuddebackville, Westtown, Rio, Mongaup, Swinging Bridge, East Wallkill, Silver Lake, Washington Heights, Bloomingburg,

Wurtsboro, Summitville, Deer Park Mobile, and Port Jervis in New York; and Matamoras in Pennsylvania (along with the Line 7 sub-transmission feed from Port Jervis to Milford).

Crew Mobilization

Based on the magnitude of this event, all available Western and Central Division Substation, Relay and Overhead crews were called in to respond. Additional operators and dispatchers were also called in to the control room to assist in the restoration efforts. Additional Substation and Relay personnel were called in from O&R's Eastern Division to support the repair effort at the Shoemaker Substation. Resources worked through Saturday night and into the day on Sunday to restore all customers as quickly and safely as possible, and to ensure that the transmission system was both safe and secure for continued operation.

Restoration

Following the event at the Shoemaker Substation, a two-pronged restoration strategy was developed by O&R's control room operators. The first prong involved restoration of the 69 kV transmission system, and was based on the Company's black start plan whereby the Company energizes transmission lines starting at a strong source and coordinating outward. As a second prong, the Company pursued a strategy to restore customers via distribution circuit ties, where possible, in parallel with the transmission restoration strategy. However, because of the loss of a majority of the transmission sources serving the Western Division, the initial restoration steps of this second prong was limited to the two areas where the availability of a feeder source remained. Specifically, portions of the 34.5 kV sub-transmission loop remained in service, allowing for the restoration of the Bloomingburg Substation (within 1.5 hours) and the Wurtsboro Substation (within 3.5 hours) prior to restoration of the full 69 kV transmission system. Likewise, portions of the 34.5 kV distribution corridor along Route 209 in Sullivan County were sectionalized and restored via field switching through ties to the 34.5 kV sub-transmission loop.

Once the damaged section of the Shoemaker Substation was isolated and made safe, shortly before midnight on Saturday evening December 5th, the Company initiated restoration of the 69 kV transmission system and the individual substations affected by the outage. Due to the configuration of the Western Division 69 kV system, the Company's transmission system operators were limited regarding any specific strategies to prioritize the order in which stations were re-energized. However, the process for re-energizing all of the affected stations not previously restored took approximately one half hour.

Simultaneous with the restoration of the individual substations, starting at approximately 0005 hours on Sunday, December 6th, the distribution section of the Company's control center began restoring distribution feeders. In order to appropriately facilitate the restoration process, distribution feeders were opened up prior to energizing any substations, and then were closed in one at a time. This resulted in an orderly restoration process that minimized the potential for an overload of any equipment.

However, because of concerns of cold load pick up affecting PCL&P's low pressure gas system, feeders serving customers in Matamoras were sectionalized and picked up in segments, adding approximately 80 minutes to the total restoration time for 379 customers.

35% of PCL&P's customers were restored by 00:31, another 56% by 00:54 and the remaining 9% by 01:51 Sunday morning (December 6th).

Inspection Program

As part of its normal inspection and maintenance program, O&R Substation Operations performs monthly visual checks, as well as infrared inspections twice a year at all Company substations. The result of the latest visual inspection on December 3, 2015 is attached as Appendix B. Part of the inspection requirements call for a visual bus inspection which includes connections and ancillary equipment. As shown in this visual inspection report, all of the bus equipment was indicated as "OK" during the last inspection. All visual inspections over the last three years yielded the same positive results.

In addition to visual inspections, infrared inspections are conducted twice each year; the most recent was completed in August 2015 under summer loading conditions. During these inspections all station equipment (buses and ancillary equipment) were scanned via thermal imaging camera in order to detect differentials between equipment and the ambient temperatures. The presence of a temperature differential on any of the equipment scanned could be indicative of an emerging problem (hot spot). As documented on the infrared tracking sheet attached as Appendix A, no issues have been detected on any Shoemaker bus equipment since August 2010. There are also no outstanding maintenance issues associated with the failed bus section.

Appendix A – Infrared Hot Spot Historical Record

				Total	Repaired	Pending
Priority #1	100°C +	*Repair Immediately*		*1*	*1*	*0*
Priority #2	50°C - 100°C	*Repair within 14 days*		*7*	*7*	*0*
Priority #3	1°C - 49°C	*Repair - Normal Maintenance*		*12*	*1*	*11*
Date	Station	Equip#	°C Rise	Due Date	Date Completed	Comment
7/28/2010	Shoemaker	T29-3	25	Monitor		ph 2 center blade
7/28/2010	Shoemaker	25-11	213	7/28/2010	7/28/2010	ph 3 strain bus
7/28/2010	Shoemaker	25Y tap	99	7/28/2010	7/28/2010	ph 2 strain bus to 25y sw
7/28/2010	Shoemaker	25-11-1	37	7/28/2010	7/28/2010	ph 3 tap
7/28/2010	*Shoemaker*	*L25 Coil*	95	*8/2/2010*	*8/2/2010*	*ph 3 L25 coil*
8/5/2011	Shoemaker	25-11	71	8/19/2011	8/20/2011	Ph3 split bolt
8/5/2011	Shoemaker	T29-3	37	Monitor		Ph2 hinge area of disc
8/5/2011	Shoemaker	11-1-2K	47	Monitor		Ph3 bushing top connector
8/5/2011	Shoemaker	13-11-3	75	8/19/2011	8/20/2011	Ph1 4 bolt clamp
8/5/2011	Shoemaker	13-11-1	99	8/19/2011	8/20/2011	Ph1 4 bolt clamp
4/5/2013	Shoemaker	11-3-2K	60.4	4/19/2013	6/6/2013	Bushing 6 source side of kyle
5/6/2014	Shoemaker	T811-29	20.1	Monitor		Bushing #6 ph #1
5/6/2014	Shoemaker	T111-27	30.1	Monitor		Bushing #5 ph #1
8/4/2014	Shoemaker	25-11-1	19.6	Monitor		Phase 2 switch blade not seated
8/4/2014	Shoemaker	11-3-3D	68.3	8/18/2014	8/26/2014	Tap to bkr on phase 3 of 3D switch
8/4/2014	Shoemaker	C2-11-1	29.7	Monitor		Center blade not seated
8/4/2014	Shoemaker	12-X	17.5	Monitor		Phase 3 not fully seated
8/4/2014	Shoemaker	T811-29	31.4	Monitor		phase 3 tap to bushing #6
4/14/2015	Shoemaker	25-11-1 Switch Phase 2	24.4	Monitor		
4/14/2015	Shoemaker	Butyl PT	15.8	Monitor		

Appendix B – Shoemaker Inspection Record – 12.3.2015

(see attached document)

TAKEN BY: WMS370C ON: 11/04/2015 @ 17.30 STATUS: 99 CO: 1 DIV: 3 JOB SVC: S
SUBST/SVC: 011/E SHOEMAKER LOC: 011-69KV (EQ#000001188)
CREW HDQTR: 0094MD RE HOURS: 1.25 DATE REQD: 12/03/2015
MR CODE: 01-11-0011 SR CODE: M01 #1 INSPECTION

WORK TO BE PERFORMED: #1 INSPECTION - SHOEMAKER 69KV

COMMENTS:

DELAY CODE: N/A

DIRECTIONS: BEHIND COMPANY OPERATIONS CENTER AT 71 DOLSON AVENUE.

OUTAGE REQUEST# : N/A OUTAGE REQUIRED :
REQUEST SUBMITTED: OUTAGE SCHEDULED :
OUTAGE COMPLETED :

WORK ASSIGNMENT: CREW ID: S42038 DATE ASSIGNED: @ 00.00
WORK COMPLETION: CREW ID: S42038 DATE ASSIGNED: 12/03/15 @ 13.00

FOLLOW-UP WORK REQD: SX ( ) RELATED WR#:

C/U CODE	DESCRIPTION	QUANT
NMR-.5MANHR	0.5 MAN HOUR FOR MR'S	1

REMARKS:

********** NO REMARKS AVAILABLE **********

** NUMBER OF STEPS ASSOCIATED WITH MR# 01-11-0011: 26
** PLEASE REFER TO THE FOLLOWING PAGES.

** CONTINUED ON NEXT PAGE...

** STEPS AND TASKS **

MR# 01-11-0011: #1 INSPECTION - SHOEMAKER 69KV
SUBST/SVC: 011/E SHOEMAKER LOC: 011-69KV (EQ#000001188)
MR NOTES: N/A

MFR: N/A EQ GRP: 999 EQ TYP: 999 STYLE: N/A
VOLTAGE RATE: N/A CUR RATE: 0000
SERIAL NO: X QTY BIL KV: 0
EQP NOTES: N/A

STEP 1: BUS INSPECTION

TEST EQUIPMENT: NONE
TEST PROCEDURE: PERFORM VISUAL INSPECTION
TYPE MEASURE: OK
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 CONNECTIONS-CHECK	OK	OK	
2 CHECK INSULATORS	OK	OK	
3 CHECK FITTINGS	OK	OK	

TASK COMMENTS:
N/A

STEP 2: SWITCHES INSPECTION

TEST EQUIPMENT: NONE
TEST PROCEDURE: PERFORM VISUAL INSPECTION
TYPE MEASURE: OK
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 CONNECTIONS-CHECK	OK	OK	
2 CHECK INSULATORS	OK	OK	

TASK COMMENTS:
N/A

STEP 3: LIQUID FUSES-HI VOLT INSP

TEST EQUIPMENT: NONE
TEST PROCEDURE: PERFORM VISUAL INSPECTION
TYPE MEASURE: OK
STEP NOTES: N/A

** CONTINUED ON NEXT PAGE...

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 CONNECTIONS-CHECK	OK	OK	
2 CHECK INSULATORS	OK	OK	
3 CHECK LIQUID LEVEL	OK	OK	

TASK COMMENTS:
N/A

STEP 4: INSTRUMENT TRANSFORMER INSPECTION

TEST EQUIPMENT: NONE
TEST PROCEDURE: PERFORM VISUAL INSPECTION
TYPE MEASURE: OK
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 CONNECTIONS-CHECK	OK	OK	

TASK COMMENTS:
N/A

STEP 5: LIGHTNING ARRESTER INSPECTION

TEST EQUIPMENT: NONE
TEST PROCEDURE: PERFORM VISUAL INSPECTION
TYPE MEASURE: OK
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 CONNECTIONS-CHECK	OK	OK	
2 CHECK PORCELAIN	OK	OK	

TASK COMMENTS:
N/A

STEP 6: EQUIPMENT GROUNDS INSPECTION

TEST EQUIPMENT: NONE
TEST PROCEDURE: PERFORM VISUAL INSPECTION
TYPE MEASURE: OK
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 POWER TRSFR.	OK	OK	
2 BREAKERS	OK	OK	
3 SWITCH HANDLES	OK	OK	

** CONTINUED ON NEXT PAGE...

** STEPS AND TASKS **

4	STRUCTURE	OK	OK
5	FENCES/BARBED WIRE	OK	OK
6	GATES	OK	OK

TASK COMMENTS:
N/A

STEP 7: TAP CHANGER INSPECTION

TEST EQUIPMENT: NONE
TEST PROCEDURE: PERFORM VISUAL INSPECTION
TYPE MEASURE: OK
STEP NOTES: N/A

TASK		ANSWER	LOW STANDARD	HIGH STANDARD
1	CONNECTIONS-CHECK	OK	OK	
2	BUSHINGS	OK	OK	
3	TANKS & RADIATORS	OK	OK	
4	TEMPERATURE	OK	OK	
5	OIL LEVEL	OK	OK	
6	LEAKS	OK	OK	
7	DRIVE MECHANISM	OK	OK	

TASK COMMENTS:
N/A

STEP 8: TRANSFORMER INSPECTION

TEST EQUIPMENT: NONE
TEST PROCEDURE: PERFORM VISUAL INSPECTION
TYPE MEASURE: OK
STEP NOTES: N/A

TASK		ANSWER	LOW STANDARD	HIGH STANDARD
1	CONNECTIONS-CHECK	OK	OK	
2	BUSHINGS	OK	OK	
3	TANKS & RADIATORS	OK	OK	
4	TEMPERATURE	OK	OK	
5	OIL LEVEL	OK	OK	
6	LEAKS	OK	OK	
7	GAUGES	OK	OK	
8	FANS	OK	OK	

TASK COMMENTS:
N/A

** CONTINUED ON NEXT PAGE...

STEP 9: RECLOSER INSPECTION

TEST EQUIPMENT: NONE
TEST PROCEDURE: PERFORM VISUAL INSPECTION
TYPE MEASURE: OK
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 CONNECTIONS-CHECK	OK	OK	
2 BUSHINGS	OK	OK	
3 OIL LEVEL	OK	OK	
4 TANKS	OK	OK	
5 LEAKS	OK	OK	

TASK COMMENTS:
N/A

STEP 10: BREAKER INSPECTION

TEST EQUIPMENT: NONE
TEST PROCEDURE: PERFORM VISUAL INSPECTION
TYPE MEASURE: OK
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 CONNECTIONS-CHECK	OK	OK	
2 BUSHINGS	OK	OK	
3 TANKS	OK	OK	
4 OIL LEVEL	OK	OK	
5 LEAKS	OK	OK	
6 MECH. AIR PRESSURE	OK	OK	
7 SF6 CHECK	OK	OK	

TASK COMMENTS:
N/A

STEP 11: GENERAL SUBSTATION INSPECTION

TEST EQUIPMENT: NONE
TEST PROCEDURE: PERFORM VISUAL INSPECTION
TYPE MEASURE: OK
STEP NOTES: N/A

** CONTINUED ON NEXT PAGE...

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 FIRE PROTECTION	OK	OK	
2 LIGHTING	OK	OK	
3 PANEL INDICATING LIG	OK	OK	
4 RELAY TARGETS	OK	OK	
5 PORCELAIN CLEANLINES	OK	OK	
6 HEATERS	OK	OK	
7 VENTILATORS	OK	OK	
8 TELEPHONES	OK	OK	
9 SWITCHSTICKS	OK	OK	
10 WEEDS/SHRUBS	OK	OK	
11 YARD SURFACE	OK	OK	
12 TREE CLEARANCES	OK	OK	
13 FENCES/BARBED WIRE	OK	OK	
14 GATES	OK	OK	
15 RODENT EVIDENCE	OK	OK	
16 HOUSEKEEPING	OK	OK	
17 LOCKS	OK	OK	
18 DANGER SIGNS	OK	OK	

TASK COMMENTS:
N/A

STEP 12: SPARE HV FUSE INSPECTION

TEST EQUIPMENT: NONE
TEST PROCEDURE: PERFORM VISUAL INSPECTION
TYPE MEASURE: OK
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 CORRECT NUMBER -3	OK	OK	
2 CONDITION OF SPARES	OK	OK	

TASK COMMENTS:
N/A

STEP 13: NITROGEN CHECK-BK.111

TEST EQUIPMENT: NONE
TEST PROCEDURE: CHECK GAUGES FOR PROPER PRESSURE
TYPE MEASURE: PSI
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 TRANSFORMER	00001.000000	0000000000000.500000	0000000000006.000000

TASK COMMENTS:

** CONTINUED ON NEXT PAGE...

STEP 14: NITROGEN CHECK-BK.311

TEST EQUIPMENT: NONE
TEST PROCEDURE: CHECK GAUGES FOR PROPER PRESSURE
TYPE MEASURE: PSI
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 TRANSFORMER	00003.000000	0000000000000.500000	0000000000006.000000

TASK COMMENTS:
N/A

STEP 15: NITROGEN CHECK-BK.711

TEST EQUIPMENT: NONE
TEST PROCEDURE: CHECK GAUGES FOR PROPER PRESSURE
TYPE MEASURE: PSI
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 BOTTLE		0000000000400.000000	0000000002200.000000
2 TRANSFORMER		0000000000000.500000	0000000000006.000000

TASK COMMENTS:
1 DASH
2 DASH

STEP 16: NITROGEN CHECK-BK.811

TEST EQUIPMENT: NONE
TEST PROCEDURE: CHECK GAUGES FOR PROPER PRESSURE
TYPE MEASURE: PSI
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 BOTTLE	01200.000000	0000000000400.000000	0000000002200.000000
2 TRANSFORMER	00003.000000	0000000000000.500000	0000000000006.000000

TASK COMMENTS:
N/A

** CONTINUED ON NEXT PAGE...

STEP 17: NITROGEN CHECK-BK. MOB.#4

TEST EQUIPMENT: NONE
TEST PROCEDURE: CHECK GAUGES FOR PROPER PRESSURE
TYPE MEASURE: PSI
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 TRANSFORMER		0000000000000.500000	0000000000006.000000

TASK COMMENTS:
1 DASH

STEP 18: NITROGEN CHECK - SPARE (1)

TEST EQUIPMENT: NONE
TEST PROCEDURE: CHECK GAUGES FOR PROPER PRESSURE
TYPE MEASURE: PSI
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 BOTTLE		0000000000400.000000	0000000002200.000000
2 TRANSFORMER		0000000000000.500000	0000000000006.000000

TASK COMMENTS:
1 DASH
2 DASH

STEP 19: BOTTLES STRAPPED

TEST EQUIPMENT: NONE
TEST PROCEDURE: VERIFY NITROGEN BOTTLE IS STRAPPED
TYPE MEASURE: OK
STEP NOTES: N/A

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 BOTTLE STRAPPED	OK	OK	

TASK COMMENTS:
N/A

STEP 20: BATTERY CHECKS-MONTHLY(130V)

TEST EQUIPMENT: VOLTMETER
TEST PROCEDURE: TAKE REQUIRED READINGS
TYPE MEASURE: VOLTS
STEP NOTES: USE PROPER PERSONAL PROTECTIVE GEAR

** CONTINUED ON NEXT PAGE...

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 PILOT CELL VOLTAGE	00002.200000	0000000000002.000000	0000000000002.500000
2 CHARGING VOLTAGE	00135.000000	0000000000128.000000	0000000000137.000000
3 CHARGING AMPS	00003.000000	0000000000000.100000	0000000000025.000000
4 WATER LEVEL		0000000000000.000000	9999999999999.999999

TASK COMMENTS:
4 CHECK

STEP 21: BATTERY CHECKS-MONTHLY(48V)- MOBILE

TEST EQUIPMENT: VOLTMETER
TEST PROCEDURE: TAKE REQUIRED READINGS
TYPE MEASURE: VOLTS
STEP NOTES: USE PROPER PERSONAL PROTECTIVE GEAR

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 PILOT CELL VOLTAGE		0000000000002.000000	0000000000002.500000
2 CHARGING VOLTAGE		0000000000052.000000	0000000000055.000000
3 CHARGING AMPS		0000000000000.100000	0000000000025.000000
4 WATER LEVEL		0000000000000.000000	9999999999999.999999

TASK COMMENTS:
1 DASH
2 DASH
3 DASH
4 DASH

STEP 22: BATTERY CHECKS-MONTHLY(11-1-2K)

TEST EQUIPMENT: VOLTMETER
TEST PROCEDURE: TAKE REQUIRED READINGS
TYPE MEASURE: VOLTS
STEP NOTES: USE PROPER PERSONAL PROTECTIVE GEAR

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 NO LOAD		0000000000024.000000	0000000000029.000000
2 UNDER LOAD		0000000000021.000000	0000000000027.500000

TASK COMMENTS:
1 DASH
2 CHECK

STEP 23: BATTERY CHECKS-MONTHLY(11-2-2K)

TEST EQUIPMENT: VOLTMETER
TEST PROCEDURE: TAKE REQUIRED READINGS
TYPE MEASURE: VOLTS
STEP NOTES: USE PROPER PERSONAL PROTECTIVE GEAR

** CONTINUED ON NEXT PAGE...

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 NO LOAD		0000000000024.000000	0000000000029.000000
2 UNDER LOAD		0000000000021.000000	0000000000027.500000

TASK COMMENTS:
1 DASH
2 CHECK

STEP 24: BATTERY CHECKS-MONTHLY(11-3-2K)

TEST EQUIPMENT: VOLTMETER
TEST PROCEDURE: TAKE REQUIRED READINGS
TYPE MEASURE: VOLTS
STEP NOTES: USE PROPER PERSONAL PROTECTIVE GEAR

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 NO LOAD		0000000000024.000000	0000000000029.000000
2 UNDER LOAD		0000000000021.000000	0000000000027.500000

TASK COMMENTS:
1 DASH
2 CHECK

STEP 25: BATTERY CHECKS-MONTHLY(11-4-2K)

TEST EQUIPMENT: VOLTMETER
TEST PROCEDURE: TAKE REQUIRED READINGS
TYPE MEASURE: VOLTS
STEP NOTES: USE PROPER PERSONAL PROTECTIVE GEAR

TASK	ANSWER	LOW STANDARD	HIGH STANDARD
1 NO LOAD		0000000000024.000000	0000000000029.000000
2 UNDER LOAD		0000000000021.000000	0000000000027.500000

TASK COMMENTS:
1 CHECK
2 DASH

STEP 26: COUNTER READINGS

TEST EQUIPMENT: NONE
TEST PROCEDURE: RECORD COUNTER READINGS
TYPE MEASURE: NONE
STEP NOTES: N/A

** CONTINUED ON NEXT PAGE...

TASK		ANSWER	LOW STANDARD	HIGH STANDARD
1	BK.111TC	71578.000000	0000000000000.000000	9999999999999.999999
2	BK.311TC		0000000000000.000000	9999999999999.999999
3	BK.711TC	12126.000000	0000000000000.000000	9999999999999.999999
4	BK.811TC	03341.000000	0000000000000.000000	9999999999999.999999
5	12-11-2	00269.000000	0000000000000.000000	9999999999999.999999
6	13-11-2	00284.000000	0000000000000.000000	9999999999999.999999
7	24-11-2	00118.000000	0000000000000.000000	9999999999999.999999
8	25-11-2	00221.000000	0000000000000.000000	9999999999999.999999
9	T111-27	00003.000000	0000000000000.000000	9999999999999.999999
10	111-11-2Y	00174.000000	0000000000000.000000	9999999999999.999999
11	27-11-2X		0000000000000.000000	9999999999999.999999
12	27-11-2X PUMP COUNTE		0000000000000.000000	9999999999999.999999
13	119-11-2	00235.000000	0000000000000.000000	9999999999999.999999
14	11-1-2K	01219.000000	0000000000000.000000	9999999999999.999999
15	11-2-2K	02555.000000	0000000000000.000000	9999999999999.999999
16	11-3-3K	02969.000000	0000000000000.000000	9999999999999.999999
17	11-4-2K	00348.000000	0000000000000.000000	9999999999999.999999
18	29-11-2X		0000000000000.000000	99999999999999999999
19	T1-11-2	00138.000000	0000000000000.000000	99999999999999999999
20	711-2	00136.000000	0000000000000.000000	99999999999999999999
21	BK711TC	12126.000000	0000000000000.000000	99999999999999999999
22	11-5-2K	00020.000000	0000000000000.000000	99999999999999999999
23	C2-11-2	02430.000000	0000000000000.000000	99999999999999999999
24	C2-11-2 PUMP OPERATI		0000000000000.000000	9999999999999.999999
25	T211-29		0000000000000.000000	9999999999999.999999
26	14-11-2	01182.000000	0000000000000.000000	9999999999999.999999
27	14-11-2 PUMP OPERATI	00264.000000	0000000000000.000000	9999999999999.999999
28	120-11-2	00065.000000	0000000000000.000000	9999999999999.999999
29	11-11-2	00125.000000	0000000000000.000000	99999999999999999999
30	T811-2A		0000000000000.000000	9999999999999.999999
31	811-11-2Y		0000000000000.000000	9999999999999.999999

TASK COMMENTS:

2	DASH
11	DASH
12	DASH
18	58340/184
24	0
25	DASH
30	DASH
31	DASH

********** END OF REPORT **********

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