



Cleveland Electrical Testing Services

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August 20, 2018

Kevia Morris
Grady Memorial Hospital
80 Jesse Hill Drive
Atlanta, GA 30303

RE: Automatic Transfer Switch Inspections
CET Job# 14-4194

Mr. Morris,

The inspection of the Automatic Transfer Switches at your facilities is complete. This report is an addendum of the synopsis of our findings delivered to you on August 15, 2018. That preliminary report is attached.

The following is a synopsis of the findings since August 15:

ATS-1D (Room BA007A)..... No Service was performed for this ATS due to the Bypass Switch failing to remain closed when operated. The switch will close but returns to open when hands are released from the handle. A complete power outage for this circuit is required to correct the condition.

ATS-1C (Room BH003)..... The inspection indicates that this ATS is in good operating order. However, the "NORMAL CONNECTED" lamp needs to be replaced.

ATS-2C (Room BH003)..... The "NORMAL CONNECTED" lamp needs to be replaced. The Normal Source Main Contacts on all poles and Emergency Source Main Contacts for A-Phase and C-Phase are not closing. This condition causes the Arcing Contacts on the pole to carry the entire load for the pole. The Arcing Contacts are not designed to carry the entire load and overheating and failure of the ATS could occur with sufficient load.

ATS-3C (Room 8H004)..... No Service was performed for this ATS due to an inability to verify that the Bypass Switch was properly connected (closed). The inspection of this ATS must be performed at a time when a possible interruption of power will not cause an unexpected disruption of normal hospital operations.

ATS-56-J (Room G16I)..... The "TEST/EXERCISE ACTIVE" lamp is illuminated. The cause should be determined and corrected as soon as possible. Otherwise, this ATS appears to be in good operating order.

ATS-M1 (Room G01S)..... The Drawout Position Indicator is sticking in the "Connected" position when the ATS is drawn out. Minor adjustments should correct the problem. Otherwise, this ATS appears to be in good operating order.

ATS-CR1 (Room G01S)..... The inspection indicates that this ATS is in good operating order.

ATS-4CCD1 (Room 4CM6A)..... The inspection indicates that this ATS is in good operating order.

ATS-4CED1 (Room 4CM6A)..... The inspection indicates that this ATS is in good operating order.

ATS-4CED2 (Room 4CM6A)..... The inspection indicates that this ATS is in good operating order.

ATS-4CLD1 (Room 4CM6A)..... The inspection indicates that this ATS is in good operating order.

As a reminder, ATS-2 ECC Critical Load (Room BB010) cannot be bypassed without a momentary interruption of power. Therefore, it was not included in our inspection process. We recommend that an authorized manufacturer service representative perform inspection and preventative maintenance for this particular switch.

Any corrections or adjustments performed for Automatic Transfer Switches that have problems with the Bypass Switches will require the power to be de-energized before any work may begin. Unfortunately it is practically impossible to determine an exact amount of time required to correct anomalies within the Bypass Switch.

The Automatic Transfer Switches that have Main Contacts not closing do not necessarily require power outages. The Cummins Field Representative that reviewed these problems on August 14, 2018, stated that he would contact and work with the engineering group within his corporation to determine a proper resolution and repair for these transfer switches. Nonetheless, replacement of the Automatic Transfer Switch may be required.

Please note that the switches were not caused to transfer from Normal to Emergency Sources during our inspections due to the possible unexpected interruption of normal hospital operations. We suggest that any transfers occur during routine generator exercises.

This report, along with the previous preliminary report (attached), and the individual inspection sheets for each ATS constitute the completion of our inspection.

Thank you for choosing Cleveland Electrical Testing Services as your testing agency. Your business is appreciated. Should you have questions concerning the work performed or wish the schedule addition inspections or testing, please contact our office at 404-505-4282.

Respectfully Submitted,

David Maney

David Maney
Switchgear Technician



Cleveland Electrical Testing Services

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August 15, 2018

Kevia Morris
Grady Memorial Hospital
80 Jesse Hill Drive
Atlanta, GA 30303

RE: Automatic Transfer Switch Inspections
CET Job# 14-4194

Mr. Morris,

Cleveland Electric Testing remains in the process of performing routine inspections for the Automatic Transfer Switches at your facilities. Per your request this is a preliminary report of the Units inspected to date (8/14/18) since many of the problems detected should be immediately addressed.

The following is a synopsis of the findings thus far.

ATS-1 (Room BB010) The Normal Source and Emergency Source B-Phase Main Contacts are not closing. This condition causes the Arcing Contacts on the pole to carry the entire load for the pole. The Arcing Contacts are not designed to carry the entire load and overheating and failure of the ATS could occur with sufficient load. The Drawout Position Lock does not spring return to the Locked position and must be manually operated to that position when performing a drawout operation. The Linear Motor shaft is binding on the Normal Source side which could cause the ATS to fail to close in the Normal Source position.

ATS-3 (Room BB010) No Service was performed for this ATS due to the Bypass Switch failing to remain closed when operated. The switch will close but returns to open when hands are released from the handle. A complete power outage for this circuit is required to correct the condition.

ATS-4 (Room BB010) The switch inspection indicates that this ATS is in good operating order.

ATS-1A (Room BB028) The Normal Source Available Lamp needs to be replaced. The Normal Source Contacts are excessively pitted and should be replaced.

ATS-2A (Room BB028) No Service was performed for this ATS due to the Bypass Switch failing to remain closed when operated. The switch will close but returns to open when hands are released from the handle. A complete power outage for this circuit is required to correct the condition.

ATS-3A (Room BB028) The switch inspection indicates that this ATS is in good operating order.

ATS-4A (Room BB028) The switch inspection indicates that this ATS is in good operating order.

ATS-1A (Room BD002A) The Normal Source and Emergency Source A-Phase and C-Phase Main Contacts are not closing. This condition causes the Arcing Contacts on the pole to carry the entire load for the poles. The Arcing Contacts are not designed to carry the entire load and overheating and failure of the ATS could occur with sufficient load. We attempted to show the Cummins Technician the problems being discovered with the Main Contacts not closing on this switch and others but the Bypass Switch failed to close. Correction of the Bypass Switch failure will require a complete power outage for this circuit.

ATS-1B (Room BD002A) The Normal Source and Emergency Source B-Phase Main Contacts are not closing. This condition causes the Arcing Contacts on the pole to carry the entire load for the pole. The Arcing Contacts are not designed to carry the entire load and overheating and failure of the ATS could occur with sufficient load. The spacers behind the Arc Chutes are not properly fastened to the pole piece and fall out when the Arc Chutes are removed for inspection/maintenance purposes.
The Cummins Technician attempted to adjust the Main Contacts for this switch but was not successful.

Again, this is not a complete report for the services ordered. There are ten (10) more Automatic Transfer Switches remaining to be inspected.

Respectfully Submitted,

David Maney

David Maney
Switchgear Technician



Deficiency Summary

Job #18-4194

PAGE 1

Customer Grady Health System

Owner Grady Memorial Hospital

Site: <u>Main Building</u>	Page: <u>1</u>
Substation: <u>Room BB010</u>	Date: <u>8/13/2018</u>
Equipment: <u>ATS-1</u>	
Equipment: <u>ONAN BT600</u>	

Deficiencies: Normal Main Contacts for B-Phase are not closing on two left Contacts.
Emergency Main Contacts for B-Phase are not closing. Arcing contact will carry entire load.
Drawout Position Lock does spring return to Lock and has to be manually pulled to Lock Postion.
Manual Operation is difficult Linear Motor Shaft seems to be hanging up.

Site: <u>Main Building</u>	Page: <u>3</u>
Substation: <u>Room BB010</u>	Date: <u>8/13/2018</u>
Equipment: <u>ATS-3</u>	
Equipment: <u>ONAN BT600</u>	

Deficiencies: Bypass Switch failed to operate properly.

Site: <u>Main Building</u>	Page: <u>7</u>
Substation: <u>Room BB028</u>	Date: <u>8/13/2018</u>
Equipment: <u>ATS-1A</u>	
Equipment: <u>ONAN BN225</u>	

Deficiencies: NORMAL SOURCE AVAILABLE lamp needs to be replaced
Normal source contacts are badly pitted - recommend replacement. Attempts to lower contact resistance failed.

Site: <u>Main Building</u>	Page: <u>9</u>
Substation: <u>Room BB028</u>	Date: <u>8/13/2018</u>
Equipment: <u>ATS-2A</u>	
Equipment: <u>ONAN BN800</u>	

Deficiencies: Bypass Switch failed to operate properly.



Deficiency Summary

Job #18-4194

Site: <u>Main Building</u>	Page: <u>15</u>
Substation: <u>Room BD002A</u>	Date: <u>8/14/2018</u>
Equipment: <u>ATS-1A</u>	
Equipment: <u>ONAN BT600</u>	

Deficiencies: Normal Source A-phase and C-phase Main Contacts are not closing.
Emergency Source A-phase and C-phase Main Contacts are not closing.
Bypass Switch failed.

Site: <u>Main Building</u>	Page: <u>17</u>
Substation: <u>Room BD002A</u>	Date: <u>8/14/2018</u>
Equipment: <u>ATS-1B</u>	
Equipment: <u>ONAN BT600</u>	

Deficiencies: Normal Source B-phase Main Contacts are not closing. Arcing contact will carry entire load
Emergency Contacts for B-Phase are not closing. Arcing contact will carry entire load.
Spacers behind all arc chutes fall out when chutes are removed.

Site: <u>Main Building</u>	Page: <u>19</u>
Substation: <u>Room BA007A</u>	Date: <u>8/15/2018</u>
Equipment: <u>ATS-1D</u>	
Equipment: <u>ONAN BT600</u>	

Deficiencies: Bypass Switch failed to operate properly.

Site: <u>Clinic Building</u>	Page: <u>21</u>
Substation: <u>Room BH003</u>	Date: <u>8/15/2018</u>
Equipment: <u>ATS-1C</u>	
Equipment: <u>ONAN BN400</u>	

Deficiencies: Normal Connected Lamp needs to be replaced.
Shutters do not close when switch is drawn out.



Deficiency Summary

Job #18-4194

Site: <u>Clinic Building</u>	Page: <u>23</u>
Substation: <u>Room BH003</u>	Date: <u>8/15/2018</u>
Equipment: <u>ATS-2C</u>	
Equipment: <u>ONAN BN800</u>	

Deficiencies: Normal Connected Lamp needs to be replaced.
Normal Source Main Contacts on all Poles are not closing. Arcing contact will carry entire load
Emergency Source Main Contacts on all B-Phase and C-Phase A-phase are not closing. Arcing contact will carry entire load.

Site: <u>Service Building</u>	Page: <u>27</u>
Substation: <u>Room G16I</u>	Date: <u>8/16/2018</u>
Equipment: <u>ATS-56-J</u>	
Equipment: <u>ONAN BTP-CC</u>	

Deficiencies: "Test/Exercise Active" lamp illuminated. Controller needs repair.

Site: <u>Service Building</u>	Page: <u>29</u>
Substation: <u>Room G01S</u>	Date: <u>8/16/2018</u>
Equipment: <u>ATS-M1</u>	
Equipment: <u>ONAN BTP-CC</u>	

Deficiencies: Drawout position indicator sticks in the Connected position during drawout.



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Owner Grady Memorial Hospital

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AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 1
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/13/2018 AMBIENT TEMPERATURE 26 °C HUMIDITY 50 % SITE Main Building
 SUBSTATION Room BB010 EQUIPMENT ATS-1

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. J910425878 TYPE BT600 Spec. 3075B
 CATALOG NO. _____ SYSTEM VOLTAGE 575 AMPACITY 600
 WIRING NO. Not Listed CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Poor	See Deficiencies
ARCING CONTACTS	✓	Acceptable	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Poor	See Deficiencies
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO.		SIZE	<input type="checkbox"/> CU <input type="checkbox"/> AL

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT		
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ SEC	NONE	0		0		
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ SEC	NONE	0		0		
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ MIN	NONE	0		0		
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ MIN	NONE	30		30		
SENSOR SETTINGS NOMINAL VOLTAGE: 575	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ %	PHASE A		546.0	95.0	546.0	95.0
	PHASE B		546.0	95.0	546.0	95.0
	PHASE C		546.0	95.0	546.0	95.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ %	PHASE A		489.0	85.0	489.0	85.0
	PHASE B		489.0	85.0	489.0	85.0
	PHASE C		489.0	85.0	489.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ %	PICKUP		546.0	95.0	546.0	95.0
	DROPOUT		489.0	85.0	489.0	85.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ %	PICKUP					
	DROPOUT					

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS
 EQPT. TEMP 26 °C
 TCF TO 20°C 0.976967

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	31.8	31.0676	31.8	31.0676
B	370.2	361.673	225.4	220.208
C	45.5	44.452	45.5	44.452
N				

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	44.1	43.0842	44.1	43.0842
B	338.8	330.996	338.8	330.996
C	43.6	42.5958	43.6	42.5958
N				

TEST EQUIPMENT USED: Megger DLRO10HD TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:	Manufacturer repairs are required. No transfer operation was performed. Limit Switches operate normally.
DEFICIENCIES:	Normal Main Contacts for B-Phase are not closing on two left Contacts. Emergency Main Contacts for B-Phase are not closing. Arcing contact will carry entire load. Drawout Position Lock does spring return to Lock and has to be manually pulled to Lock Position. Manual Operation is difficult Linear Motor Shaft seems to be hanging up.



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 3
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/13/2018 AMBIENT TEMPERATURE 26 °C HUMIDITY 50 % SITE Main Building
 SUBSTATION Room BB010 EQUIPMENT ATS-3

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. J910425879 TYPE BT600 Spec. 3075B
 CATALOG NO. _____ SYSTEM VOLTAGE 575 AMPACITY 600
 WIRING NO. Not Listed CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	<input checked="" type="checkbox"/>	Acceptable	
INSULATING MEMBERS	<input type="checkbox"/>		
MECHANICAL CONNECTIONS	<input type="checkbox"/>		
STRUCTURAL MEMBERS	<input type="checkbox"/>		
MAIN CONTACTS	<input type="checkbox"/>		
ARCING CONTACTS	<input type="checkbox"/>		

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	<input type="checkbox"/>		
OPERATING MECHANISM	<input checked="" type="checkbox"/>	Very Poor	See Deficiencies
CONTACT SEQUENCE	<input type="checkbox"/>		
GROUND CONNECTION	<input type="checkbox"/>		
AUXILIARY DEVICES	<input type="checkbox"/>		
LOAD CONDUCTOR NO. _____	SIZE _____	CU <input type="checkbox"/>	AL <input type="checkbox"/>

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT		
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ _____ SEC	NONE	10		10		
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ _____ SEC	NONE	0		0		
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ _____ MIN	NONE	0		0		
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ _____ MIN	NONE	25		25		
SENSOR SETTINGS NOMINAL VOLTAGE: <u>575</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ _____ %	PHASE A		546.0	95.0	546.0	95.0
	PHASE B		546.0	95.0	546.0	95.0
	PHASE C		546.0	95.0	546.0	95.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ _____ %	PHASE A		489.0	85.0	489.0	85.0
	PHASE B		489.0	85.0	489.0	85.0
	PHASE C		489.0	85.0	489.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ _____ %	PICKUP		546.0	95.0	546.0	95.0
	DROPOUT		489.0	85.0	489.0	85.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ _____ %	PICKUP					
	DROPOUT					

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS
 EQPT. TEMP 26 °C
 TCF TO 20°C 0.976967

NORMAL				
POLE	AS FOUND	20°C	AS LEFT	20°C
A				
B				
C				
N				

EMERGENCY				
POLE	AS FOUND	20°C	AS LEFT	20°C
A				
B				
C				
N				

TEST EQUIPMENT USED: Megger DLRO10HD TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:	No Service performed for this equipment due the Bypass Switch Failure. Bypass Switch will close but reopens when the operator handle is released. Manufacturer repair required.
DEFICIENCIES:	Bypass Switch failed to operate properly.



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 5
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/13/2018 AMBIENT TEMPERATURE 26 °F HUMIDITY 50 % SITE Main Building
 SUBSTATION Room BB010 EQUIPMENT ATS-4

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. I910422262 TYPE BT600 Spec. 3075B
 CATALOG NO. _____ SYSTEM VOLTAGE 575 AMPACITY 600
 WIRING NO. Not Listed CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS Elevator Signal Timing, Program Transition Timing

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Good	
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. <u>2</u> SIZE <u>350</u>	✓	CU	AL

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT	
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u>SEC</u>	NONE	0		0	
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u>SEC</u>	NONE	0		0	
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u>MIN</u>	NONE	0		0	
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u>MIN</u>	NONE	10		10	
SENSOR SETTINGS NOMINAL VOLTAGE: <u>575</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PHASE A		546.0	95.0	546.0
	PHASE B		546.0	95.0	546.0
	PHASE C		546.0	95.0	546.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PHASE A		489.0	85.0	489.0
	PHASE B		489.0	85.0	489.0
	PHASE C		489.0	85.0	489.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PICKUP		546.0	95.0	546.0
	DROPOUT		489.0	85.0	489.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PICKUP				
	DROPOUT				

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS
 EQPT. TEMP 26 °C
 TCF TO 20°C 0.976967

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	30.9	30.1883	30.9	30.1883
B	72	70.3416	73.2	71.514
C	42	41.0326	42	41.0326
N				

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	56.2	54.9055	56.2	54.9055
B	37.1	36.2455	37.1	36.2455
C	32.3	31.556	32.3	31.556
N				

TEST EQUIPMENT USED: Megger DLRO10HD TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:
DEFICIENCIES:



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 7
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/13/2018 AMBIENT TEMPERATURE 21 °C HUMIDITY 59 % SITE Main Building
 SUBSTATION Room BB028 EQUIPMENT ATS-1A

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. A930497374 TYPE BN225 Spec. 4687C
 CATALOG NO. _____ SYSTEM VOLTAGE 480Y/277 AMPACITY 225
 WIRING NO. 626-1951 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Poor	See Deficiencies
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. <u>1</u> SIZE <u>4/0</u> <input checked="" type="checkbox"/> CU <input type="checkbox"/> AL			

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT		
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC	NONE	0		0		
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC	NONE	0		0		
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN	NONE	6		6		
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN	NONE	30		30		
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		456.0	95.0	456.0	95.0
	PHASE B		456.0	95.0	456.0	95.0
	PHASE C		456.0	95.0	456.0	95.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		384.0	80.0	384.0	80.0
	PHASE B		384.0	80.0	384.0	80.0
	PHASE C		384.0	80.0	384.0	80.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		432.0	90.0	432.0	90.0
	DROPOUT		384.0	80.0	384.0	80.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP					
	DROPOUT					

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS
 EQPT. TEMP 21 °C
 TCF TO 20°C 0.996086

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	245.5	244.539	251.6	250.615
B	117.4	116.94	105.1	104.689
C	123.6	123.116	126.2	125.706
N	103.2	102.796	102.7	102.298

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	137.6	137.061	134.9	134.372
B	127.8	127.3	124.1	123.614
C	121.6	121.124	119.9	119.431
N	806.8	803.642	168.8	168.139

TEST EQUIPMENT USED: Megger DLRO10HD TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:	No transfer operation was performed. Limit Switches operate normally. Switch operates smoothly with no binding.
DEFICIENCIES:	NORMAL SOURCE AVAILABLE lamp needs to be replaced Normal source contacts are badly pitted - recommend replacement. Attempts to lower contact resistance failed.



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 9
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/13/2018 AMBIENT TEMPERATURE 21 °C HUMIDITY 60 % SITE Main Building
 SUBSTATION Room BB028 EQUIPMENT ATS-2A

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. A930496669 TYPE BN800 Spec. 4688C
 CATALOG NO. _____ SYSTEM VOLTAGE 480 AMPACITY 800
 WIRING NO. 626-1951 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	<input checked="" type="checkbox"/>	Acceptable	
INSULATING MEMBERS	<input type="checkbox"/>		
MECHANICAL CONNECTIONS	<input type="checkbox"/>		
STRUCTURAL MEMBERS	<input type="checkbox"/>		
MAIN CONTACTS	<input type="checkbox"/>		
ARCING CONTACTS	<input type="checkbox"/>	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	<input type="checkbox"/>		
OPERATING MECHANISM	<input checked="" type="checkbox"/>	Very Poor	See Deficiencies
CONTACT SEQUENCE	<input type="checkbox"/>		
GROUND CONNECTION	<input type="checkbox"/>		
AUXILIARY DEVICES	<input type="checkbox"/>		
LOAD CONDUCTOR NO. _____		SIZE <u>350x3</u> <input checked="" type="checkbox"/> CU <input type="checkbox"/> AL	

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT		
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC	NONE	0		0		
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC	NONE	0		0		
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN	NONE	6		6		
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN	NONE	8		8		
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		456.0	95.0	456.0	95.0
	PHASE B		456.0	95.0	456.0	95.0
	PHASE C		456.0	95.0	456.0	95.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		408.0	85.0	408.0	85.0
	PHASE B		408.0	85.0	408.0	85.0
	PHASE C		408.0	85.0	408.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		456.0	95.0	456.0	95.0
	DROPOUT		408.0	85.0	408.0	85.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP					
	DROPOUT					

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS
 EQPT. TEMP 21 °C
 TCF TO 20°C 0.996086

NORMAL				
POLE	AS FOUND	20°C	AS LEFT	20°C
A				
B				
C				
N				

EMERGENCY				
POLE	AS FOUND	20°C	AS LEFT	20°C
A				
B				
C				
N				

TEST EQUIPMENT USED: _____ TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:	No Service performed for this equipment due the Bypass Switch Failure. Bypass Switch will close but reopens when the operator handle is released.
DEFICIENCIES:	Bypass Switch failed to operate properly.



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 11
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/13/2018 AMBIENT TEMPERATURE 21 °C HUMIDITY 61 % SITE Main Building
 SUBSTATION Room BB028 EQUIPMENT ATS-3A

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. A930496296 TYPE BN1000 Spec 4689C
 CATALOG NO. _____ SYSTEM VOLTAGE 480Y/277 AMPACITY 1000
 WIRING NO. 626-1951 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Good	
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. _____			
SIZE <u>500x3</u>			
	✓	CU	AL

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT		
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ _____ SEC	NONE	0		0		
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ _____ SEC	NONE	0		0		
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ _____ MIN	NONE	0		0		
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ _____ MIN	NONE	8		8		
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ _____ %	PHASE A		456.0	95.0	456.0	95.0
	PHASE B		456.0	95.0	456.0	95.0
	PHASE C		456.0	95.0	456.0	95.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ _____ %	PHASE A		408.0	85.0	408.0	85.0
	PHASE B		408.0	85.0	408.0	85.0
	PHASE C		408.0	85.0	408.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ _____ %	PICKUP		456.0	95.0	456.0	95.0
	DROPOUT		408.0	85.0	408.0	85.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ _____ %	PICKUP					
	DROPOUT					

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS

EQPT. TEMP 21 °C
 TCF TO 20°C 0.996086

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	26.1	25.9978	26.1	25.9978
B	50.9	50.7008	50.9	50.7008
C	32.5	32.3728	32.5	32.3728
N	26.7	26.5955	26.7	26.5955

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	40	39.8434	40	39.8434
B	75.1	74.8061	75.1	74.8061
C	68.7	68.4311	68.7	68.4311
N	42.1	41.9352	42.1	41.9352

TEST EQUIPMENT USED: Megger DLRO10HD

TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:
DEFICIENCIES:



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 13
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/14/2018 AMBIENT TEMPERATURE 20 °C HUMIDITY 59 % SITE Main Building
 SUBSTATION Room BB028 EQUIPMENT ATS-4A

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. E020371866 TYPE BTP-CC5558762 Spec. A
 CATALOG NO. _____ SYSTEM VOLTAGE 480Y/277 AMPACITY 400
 WIRING NO. 0626-2334 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Good	
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. _____			
SIZE <u>500x1</u>	✓	CU	AL

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT		
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ _____ SEC	NONE	0.5		0.5		
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ _____ SEC	NONE	0		0		
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ _____ MIN	NONE	0		0		
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ _____ MIN	NONE	10		10		
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ _____ %	PHASE A		432.0	90.0	432.0	90.0
	PHASE B		432.0	90.0	432.0	90.0
	PHASE C		432.0	90.0	432.0	90.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ _____ %	PHASE A		432.0	90.0	432.0	90.0
	PHASE B		432.0	90.0	432.0	90.0
	PHASE C		432.0	90.0	432.0	90.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ _____ %	PICKUP		432.0	90.0	432.0	90.0
	DROPOUT		432.0	90.0	432.0	90.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ _____ %	PICKUP		54.0	90.0	54.0	90.0
	DROPOUT		59.4	99.0	59.4	99.0

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS
 EQPT. TEMP 20 °C
 TCF TO 20°C 1

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	65.6	65.6	65.6	65.6
B	55	55	55	55
C	53.3	53.3	53.3	53.3
N	70	70	70	70

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	58.9	58.9	58.9	58.9
B	64.9	64.9	64.9	64.9
C	65.3	65.3	65.3	65.3
N	160.4	160.4	160.4	160.4

TEST EQUIPMENT USED: Megger DLRO10HD TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:
DEFICIENCIES:



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 15
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/14/2018 AMBIENT TEMPERATURE 24 °C HUMIDITY 48 % SITE Main Building
 SUBSTATION Room BD002A EQUIPMENT ATS-1A

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. I910422261 TYPE BT600 Spec. 3075B
 CATALOG NO. _____ SYSTEM VOLTAGE 575 AMPACITY 600
 WIRING NO. Not Listed CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Very Poor	See Deficiencies
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Very Poor	See Deficiencies
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. <u>2</u> SIZE <u>350</u>	✓	CU	AL

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT		
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC	NONE	0		0		
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC	NONE	0		0		
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN	NONE	0		0		
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN	NONE	10		10		
SENSOR SETTINGS NOMINAL VOLTAGE: <u>575</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		546.0	95.0	546.0	95.0
	PHASE B		546.0	95.0	546.0	95.0
	PHASE C		546.0	95.0	546.0	95.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		489.0	85.0	489.0	85.0
	PHASE B		489.0	85.0	489.0	85.0
	PHASE C		489.0	85.0	489.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		546.0	95.0	546.0	95.0
	DROPOUT		489.0	85.0	489.0	85.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP					
	DROPOUT					

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS

EQPT. TEMP 24 °C
 TCF TO 20°C 0.984526

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	169.8	167.173	169.8	167.173
B	50.5	49.7186	50.5	49.7186
C	185.4	182.531	185.4	182.531
N				

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	223.4	219.943	223.4	219.943
B	98.5	96.9758	70.8	69.7044
C	146.6	144.332	146.6	144.332
N				

TEST EQUIPMENT USED: Megger DLRO10HD

TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:	When trying to show Cummins Rep. what is wrong with the main contacts, could not get the switch to bypass. Manufacturer repairs are required.
DEFICIENCIES:	Normal Source A-phase and C-phase Main Contacts are not closing. Emergency Source A-phase and C-phase Main Contacts are not closing. Bypass Switch failed.



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 17
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/14/2018 AMBIENT TEMPERATURE 24 °C HUMIDITY 47 % SITE Main Building
 SUBSTATION Room BD002A EQUIPMENT ATS-1B

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. F920473440 TYPE BT600 Spec. 3075C
 CATALOG NO. _____ SYSTEM VOLTAGE 575 AMPACITY 600
 WIRING NO. Not Listed CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Very Poor	See Deficiencies
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	See Deficiencies
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. _____		SIZE <u>350x2</u>	<input checked="" type="checkbox"/> CU <input type="checkbox"/> AL

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT	
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u>SEC</u>	NONE	1		1	
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u>SEC</u>	NONE	0		0	
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u>MIN</u>	NONE	5		5	
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u>MIN</u>	NONE	0		0	
SENSOR SETTINGS NOMINAL VOLTAGE: <u>575</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PHASE A		546.0	95.0	546.0
	PHASE B		546.0	95.0	546.0
	PHASE C		546.0	95.0	546.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PHASE A		489.0	85.0	489.0
	PHASE B		489.0	85.0	489.0
	PHASE C		489.0	85.0	489.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PICKUP		546.0	95.0	546.0
	DROPOUT		489.0	85.0	489.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PICKUP				
	DROPOUT				

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS
 EQPT. TEMP 25 °C
 TCF TO 20°C 0.980732

NORMAL				
POLE	AS FOUND	20°C	AS LEFT	20°C
A	33.7	33.0507	33.7	33.0507
B	172.1	168.784	172.1	168.784
C	41.5	40.7004	41.5	40.7004
N				

EMERGENCY				
POLE	AS FOUND	20°C	AS LEFT	20°C
A	37.4	36.6794	37.4	36.6794
B	86.4	84.7352	402.2	394.45
C	39	38.2485	39	38.2485
N				

TEST EQUIPMENT USED: Megger DLRO10HD TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:	No transfer operation was performed. Limit Switches operate normally. Switch operates smoothly with no binding. Manufacturer repairs are required.
DEFICIENCIES:	Normal Source B-phase Main Contacts are not closing. Arcing contact will carry entire load Emergency Contacts for B-Phase are not closing. Arcing contact will carry entire load. Spacers behind all arc chutes fall out when chutes are removed.



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 19
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/15/2018 AMBIENT TEMPERATURE 22 °C HUMIDITY 51 % SITE Main Building
 SUBSTATION Room BA007A EQUIPMENT ATS-1D

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. A930496295 TYPE BT600 Spec. 3075C
 CATALOG NO. _____ SYSTEM VOLTAGE 575 AMPACITY 600
 WIRING NO. 626-1953 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	<input checked="" type="checkbox"/>	Acceptable	
INSULATING MEMBERS	<input type="checkbox"/>		
MECHANICAL CONNECTIONS	<input type="checkbox"/>		
STRUCTURAL MEMBERS	<input type="checkbox"/>		
MAIN CONTACTS	<input type="checkbox"/>		
ARCING CONTACTS	<input type="checkbox"/>		

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	<input type="checkbox"/>		
OPERATING MECHANISM	<input checked="" type="checkbox"/>	Very Poor	See Deficiencies
CONTACT SEQUENCE	<input type="checkbox"/>		
GROUND CONNECTION	<input type="checkbox"/>		
AUXILIARY DEVICES	<input type="checkbox"/>		
LOAD CONDUCTOR NO. _____	SIZE _____	CU <input type="checkbox"/>	AL <input type="checkbox"/>

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT		
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ _____ SEC	NONE	0		0		
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ _____ SEC	NONE	0		0		
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ _____ MIN	NONE	4		4		
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ _____ MIN	NONE	10		10		
SENSOR SETTINGS NOMINAL VOLTAGE: <u>575</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ _____ %	PHASE A		546.0	95.0	546.0	95.0
	PHASE B		546.0	95.0	546.0	95.0
	PHASE C		546.0	95.0	546.0	95.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ _____ %	PHASE A		489.0	85.0	489.0	85.0
	PHASE B		489.0	85.0	489.0	85.0
	PHASE C		489.0	85.0	489.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ _____ %	PICKUP		529.0	92.0	529.0	92.0
	DROPOUT		489.0	85.0	489.0	85.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ _____ %	PICKUP					
	DROPOUT					

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS
 EQPT. TEMP 22 °C
 TCF TO 20°C 0.992203

NORMAL				
POLE	AS FOUND	20°C	AS LEFT	20°C
A				
B				
C				
N				

EMERGENCY				
POLE	AS FOUND	20°C	AS LEFT	20°C
A				
B				
C				
N				

TEST EQUIPMENT USED: Megger DLRO10HD TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:	No Service performed for this equipment due the Bypass Switch Failure. Bypass Switch will close but reopens when the operator handle is released.
DEFICIENCIES:	Bypass Switch failed to operate properly.



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 21
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/15/2018 AMBIENT TEMPERATURE 23 °C HUMIDITY 44 % SITE Clinic Building
 SUBSTATION Room BH003 EQUIPMENT ATS-1C

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. D920461891 TYPE BN400 Spec. 3980C
 CATALOG NO. _____ SYSTEM VOLTAGE 480Y/277 AMPACITY 400
 WIRING NO. 626-1951 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Acceptable	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Good	
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. <u>1</u> SIZE <u>4/0</u> <input checked="" type="checkbox"/> CU <input type="checkbox"/> AL			

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT		
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC	NONE	8		8		
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC	NONE	0		0		
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN	NONE	3		3		
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN	NONE	30		30		
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		456.0	95.0	456.0	95.0
	PHASE B		456.0	95.0	456.0	95.0
	PHASE C		456.0	95.0	456.0	95.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		408.0	85.0	408.0	85.0
	PHASE B		408.0	85.0	408.0	85.0
	PHASE C		408.0	85.0	408.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		432.0	90.0	432.0	90.0
	DROPOUT		408.0	85.0	408.0	85.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP					
	DROPOUT					

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS
 EQPT. TEMP 23 °C
 TCF TO 20°C 0.98835

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	43.3	42.7956	43.3	42.7956
B	37.7	37.2608	37.7	37.2608
C	38.8	38.348	38.8	38.348
N	43.1	42.5979	43.1	42.5979

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	56	55.3476	56	55.3476
B	46.1	45.5629	46.1	45.5629
C	55	54.3592	55	54.3592
N	55.4	54.7546	55.4	54.7546

TEST EQUIPMENT USED: Megger DLRO10HD

TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:

No transfer operation was performed. Limit Switches operate normally. Switch operates smoothly with no binding.

DEFICIENCIES:

Normal Connected Lamp needs to be replaced.
Shutters do not close when switch is drawn out.



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 23
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/15/2018 AMBIENT TEMPERATURE 23 °C HUMIDITY 43 % SITE Clinic Building
 SUBSTATION Room BH003 EQUIPMENT ATS-2C

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. H920479028 TYPE BN800 Spec. 426C
 CATALOG NO. _____ SYSTEM VOLTAGE 480Y/277 AMPACITY 800
 WIRING NO. 626-1951 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Very Poor	See Deficiencies
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. <u>2</u> SIZE <u>350</u>	✓	CU	AL

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT		
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC	NONE	0		0		
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC	NONE	0		0		
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN	NONE	3		3		
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN	NONE	30		30		
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		456.0	95.0	456.0	95.0
	PHASE B		456.0	95.0	456.0	95.0
	PHASE C		456.0	95.0	456.0	95.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		408.0	85.0	408.0	85.0
	PHASE B		408.0	85.0	408.0	85.0
	PHASE C		408.0	85.0	408.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		456.0	95.0	456.0	95.0
	DROPOUT		408.0	85.0	408.0	85.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP					
	DROPOUT					

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS

EQPT. TEMP 23 °C
 TCF TO 20°C 0.98835

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	135.5	133.921	135.5	133.921
B	188.4	186.205	188.4	186.205
C	164	162.089	164	162.089
N	99.3	98.1432	99.3	98.1432

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	53.5	52.8767	53.5	52.8767
B	179.8	177.705	179.8	177.705
C	293.6	290.18	293.6	290.18
N	94	92.9049	94	92.9049

TEST EQUIPMENT USED: Megger DLRO10HD

TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:	No transfer operation was performed. Limit Switches operate normally. Switch operates smoothly with no binding. Manufacturer repairs are required.
DEFICIENCIES:	Normal Connected Lamp needs to be replaced. Normal Source Main Contacts on all Poles are not closing. Arcing contact will carry entire load Emergency Source Main Contacts on all B-Phase and C-Phase A-phase are not closing. Arcing contact will carry entire load.



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 25
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/15/2018 AMBIENT TEMPERATURE 25 °C HUMIDITY 50 % SITE Clinic Building
 SUBSTATION Room 8H004 EQUIPMENT ATS-3C

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. H920481169 TYPE BN1600 Spec. 4217B
 CATALOG NO. _____ SYSTEM VOLTAGE 480Y/277 AMPACITY 1600
 WIRING NO. 626-1988 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	<input checked="" type="checkbox"/>	Dirty	
INSULATING MEMBERS	<input type="checkbox"/>		
MECHANICAL CONNECTIONS	<input type="checkbox"/>		
STRUCTURAL MEMBERS	<input type="checkbox"/>		
MAIN CONTACTS	<input type="checkbox"/>		
ARCING CONTACTS	<input type="checkbox"/>		

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	<input type="checkbox"/>		
OPERATING MECHANISM	<input checked="" type="checkbox"/>	See Comments	See Deficiencies
CONTACT SEQUENCE	<input type="checkbox"/>		
GROUND CONNECTION	<input type="checkbox"/>		
AUXILIARY DEVICES	<input type="checkbox"/>		
LOAD CONDUCTOR NO.		SIZE	<input type="checkbox"/> CU <input type="checkbox"/> AL

TIME DELAYS	SPECIFIED		AS FOUND		AS LEFT			
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ SEC			0		0			
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ SEC			0		0			
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ MIN			6		6			
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ MIN			22		22			
SENSOR SETTINGS NOMINAL VOLTAGE: 480		VOLTS & HZ		%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ %	PHASE A		456.0	95.0	456.0	95.0		
	PHASE B		456.0	95.0	456.0	95.0		
	PHASE C		456.0	95.0	456.0	95.0		
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ %	PHASE A		408.0	85.0	408.0	85.0		
	PHASE B		408.0	85.0	408.0	85.0		
	PHASE C		408.0	85.0	408.0	85.0		
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ %	PICKUP		432.0	90.0	432.0	90.0		
	DROPOUT		408.0	85.0	408.0	85.0		
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ %	PICKUP							
	DROPOUT							

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS

EQPT. TEMP 26 °C
 TCF TO 20°C 0.976967

NORMAL				
POLE	AS FOUND	20°C	AS LEFT	20°C
A				
B				
C				
N				

EMERGENCY				
POLE	AS FOUND	20°C	AS LEFT	20°C
A				
B				
C				
N				

TEST EQUIPMENT USED: _____

TESTED BY: David Maney



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS: No Service performed -- Unable to confirm that bypass switch is closed.

DEFICIENCIES:



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 27
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/16/2018 AMBIENT TEMPERATURE 24 °C HUMIDITY 53 % SITE Service Building
 SUBSTATION Room G16I EQUIPMENT ATS-56-J

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. E020371246 TYPE BTP-CC-5557847 Spec.A
 CATALOG NO. _____ SYSTEM VOLTAGE 480Y/277 AMPACITY 400
 WIRING NO. 0626-2334 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Good	
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. <u>1</u> SIZE <u>500</u>	✓	CU	AL

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT	
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u>SEC</u>	NONE	1		1	
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u>SEC</u>	NONE	0		0	
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u>MIN</u>	NONE	0		0	
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u>MIN</u>	NONE	10		10	
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PHASE A		432.0	90.0	432.0
	PHASE B		432.0	90.0	432.0
	PHASE C		432.0	90.0	432.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PHASE A		408.0	85.0	408.0
	PHASE B		408.0	85.0	408.0
	PHASE C		408.0	85.0	408.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PICKUP		432.0	90.0	432.0
	DROPOUT		408.0	85.0	408.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PICKUP				
	DROPOUT				

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS

EQPT. TEMP 24 °C
 TCF TO 20°C 0.984526

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	51.6	50.8015	51.6	50.8015
B	54.8	53.952	54.8	53.952
C	49.8	49.0294	49.8	49.0294
N				

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	55.4	54.5427	55.4	54.5427
B	52.2	51.3923	52.2	51.3923
C	52.1	51.2938	52.1	51.2938
N				

TEST EQUIPMENT USED: Megger DLRO10HD

TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:	Found with Program Mode ON -- Returned to Panel Locked Mode. "Test/Exercise Active" lamp illuminated -- lamp still illuminated after service. No transfer operation was performed. Limit Switches operate normally. Switch operates smoothly with no binding.
DEFICIENCIES:	"Test/Exercise Active" lamp illuminated. Controller needs repair.



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 29
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/16/2018 AMBIENT TEMPERATURE 25 °C HUMIDITY 51 % SITE Service Building
 SUBSTATION Room G01S EQUIPMENT ATS-M1

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. K090058221 TYPE BTP-CC Spec. B
 CATALOG NO. _____ SYSTEM VOLTAGE 480Y/277 AMPACITY 400
 WIRING NO. 0626-2334 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Good	
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. <u>1</u> SIZE <u>500</u>		✓	CU <input type="checkbox"/> AL <input type="checkbox"/>

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT		
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC	NONE	2		2		
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC	NONE	1		1		
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN	NONE	5		5		
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN	NONE	5		5		
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		432.0	90.0	432.0	90.0
	PHASE B		432.0	90.0	432.0	90.0
	PHASE C		432.0	90.0	432.0	90.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		408.0	85.0	408.0	85.0
	PHASE B		408.0	85.0	408.0	85.0
	PHASE C		408.0	85.0	408.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		432.0	90.0	432.0	90.0
	DROPOUT		408.0	85.0	408.0	85.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		54.0	90.0	54.0	90.0
	DROPOUT		53.4	89.0	53.4	89.0

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS

EQPT. TEMP 25 °C
 TCF TO 20°C 0.980732

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	51.3	50.3116	51.3	50.3116
B	50.7	49.7231	50.7	49.7231
C	85.2	83.5584	61.4	60.2169
N	61.5	60.315	61.5	60.315

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	380.2	372.874	93.5	91.6984
B	158.3	155.25	86.2	84.5391
C	88.5	86.7948	72.8	71.3973
N	162.4	159.271	82.3	80.7142

TEST EQUIPMENT USED: Megger DLRO10HD

TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:
DEFICIENCIES:

No transfer operation was performed. Limit Switches operate normally. Switch operates smoothly with no binding.
Drawout position indicator sticks in the Connected position during drawout.



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 31
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/16/2018 AMBIENT TEMPERATURE 26 °C HUMIDITY 48 % SITE Service Building
 SUBSTATION Room G01S EQUIPMENT ATS-CR1

NAMEPLATE DATA

MANUFACTURER ONAN SERIAL NO. K090058222 TYPE BTP-CC Spec. B
 CATALOG NO. _____ SYSTEM VOLTAGE 480Y/277 AMPACITY 400
 WIRING NO. 0626-2334 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Good	
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. <u>1</u> SIZE <u>300</u>	✓	CU	AL

TIME DELAYS	SPECIFIED	AS FOUND		AS LEFT	
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u>SEC</u>	NONE	2		2	
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u>SEC</u>	NONE	0		0	
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u>MIN</u>	NONE	5		5	
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u>MIN</u>	NONE	5		5	
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PHASE A		432.0	90.0	432.0
	PHASE B		432.0	90.0	432.0
	PHASE C		432.0	90.0	432.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PHASE A		408.0	85.0	408.0
	PHASE B		408.0	85.0	408.0
	PHASE C		408.0	85.0	408.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PICKUP		432.0	90.0	432.0
	DROPOUT		408.0	85.0	408.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u>%</u>	PICKUP		54.0	90.0	54.0
	DROPOUT		53.4	89.0	53.4

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS
 EQPT. TEMP 26 °C
 TCF TO 20°C 0.976967

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	58.6	57.2503	58.6	57.2503
B	67	65.4568	67	65.4568
C	48.6	47.4806	48.6	47.4806
N	70.1	68.4854	70.1	68.4854

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	72.5	70.8301	70.8	69.1693
B	53.6	52.3654	53.6	52.3654
C	59.1	57.7387	59.1	57.7387
N	147.8	144.396	61.2	59.7904

TEST EQUIPMENT USED: Megger DLRO10HD

TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS: No transfer operation was performed. Limit Switches operate normally. Switch operates smoothly with no binding.

DEFICIENCIES:



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 33
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/17/2018 AMBIENT TEMPERATURE 23 °C HUMIDITY 49 % SITE ED Expansion Building
 SUBSTATION Room 4CM6A EQUIPMENT ATS-4CCD1

NAMEPLATE DATA

MANUFACTURER ASCO SERIAL NO. 1122982-002 WE TYPE 7000
 CATALOG NO. H07ATBB30800N5XC SYSTEM VOLTAGE 480Y/277 AMPACITY 800
 WIRING NO. 735259-089 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Good	
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. <u>2</u> SIZE <u>500k</u>	✓	CU	AL

TIME DELAYS	SPECIFIED		AS FOUND		AS LEFT	
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC			1		1	
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC			0		0	
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN			0		0	
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN			30		30	
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>						
	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		432.0	90.0	432.0	90.0
	PHASE B		432.0	90.0	432.0	90.0
	PHASE C		432.0	90.0	432.0	90.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		408.0	85.0	408.0	85.0
	PHASE B		408.0	85.0	408.0	85.0
	PHASE C		408.0	85.0	408.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		432.0	90.0	432.0	90.0
	DROPOUT		360.0	75.0	360.0	75.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		57.0	95.0	57.0	95.0
	DROPOUT		54.0	90.0	54.0	90.0

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS

EQPT. TEMP 23 °C
 TCF TO 20°C 0.98835

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	41.5	41.0165	41.5	41.0165
B	39.2	38.7433	39.2	38.7433
C	46.2	45.6618	46.2	45.6618
N	48.9	48.3303	48.9	48.3303

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	54	53.3709	54	53.3709
B	63.1	62.3649	63.1	62.3649
C	68.7	67.8996	68.7	67.8996
N	59.9	59.2022	59.9	59.2022

TEST EQUIPMENT USED: Megger DLRO10HD

TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:
DEFICIENCIES:



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 35
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/16/2018 AMBIENT TEMPERATURE 23 °C HUMIDITY 48 % SITE ED Expansion Building
 SUBSTATION Room 4CM6A EQUIPMENT ATS-4CED1

NAMEPLATE DATA

MANUFACTURER ASCO SERIAL NO. 1122982-001 WE TYPE 7000
 CATALOG NO. H07ATBB30800N5XC SYSTEM VOLTAGE 480Y/277 AMPACITY 800
 WIRING NO. 735259-089 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Good	
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. <u>2</u> SIZE <u>500k</u>	✓	CU	AL

TIME DELAYS	SPECIFIED		AS FOUND		AS LEFT	
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC			1		1	
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC			0		0	
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN			0		0	
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN			30		30	
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>						
	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		432.0	90.0	432.0	90.0
	PHASE B		432.0	90.0	432.0	90.0
	PHASE C		432.0	90.0	432.0	90.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		408.0	85.0	408.0	85.0
	PHASE B		408.0	85.0	408.0	85.0
	PHASE C		408.0	85.0	408.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		432.0	90.0	432.0	90.0
	DROPOUT		360.0	75.0	360.0	75.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		57.0	95.0	57.0	95.0
	DROPOUT		54.0	90.0	54.0	90.0

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS

EQPT. TEMP 23 °C
 TCF TO 20°C 0.98835

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	48.5	47.935	48.5	47.935
B	38.6	38.1503	38.6	38.1503
C	45.7	45.1676	45.7	45.1676
N	36.7	36.2724	36.7	36.2724

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	53.2	52.5802	53.2	52.5802
B	54.4	53.7662	54.4	53.7662
C	46.2	45.6618	46.2	45.6618
N	58.7	58.0161	58.7	58.0161

TEST EQUIPMENT USED: Megger DLRO10HD

TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS: No transfer operation was performed. Limit Switches operate normally. Switch operates smoothly with no binding.

DEFICIENCIES:



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 37
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/17/2018 AMBIENT TEMPERATURE 23 °C HUMIDITY 49 % SITE ED Expansion Building
 SUBSTATION Room 4CM6A EQUIPMENT ATS-4CED2

NAMEPLATE DATA

MANUFACTURER ASCO SERIAL NO. 1122981 WE TYPE 7000
 CATALOG NO. H07ATBC30800N5XC SYSTEM VOLTAGE 480Y/277 AMPACITY 800
 WIRING NO. 735259-006 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Good	
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. <u>2</u> SIZE <u>500</u>	✓	CU	AL

TIME DELAYS	SPECIFIED		AS FOUND		AS LEFT	
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC			1		1	
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC			0		0	
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN			0		0	
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN			30		30	
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>						
	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		432.0	90.0	432.0	90.0
	PHASE B		432.0	90.0	432.0	90.0
	PHASE C		432.0	90.0	432.0	90.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		408.0	85.0	408.0	85.0
	PHASE B		408.0	85.0	408.0	85.0
	PHASE C		408.0	85.0	408.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		432.0	90.0	432.0	90.0
	DROPOUT		360.0	75.0	360.0	75.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		57.0	95.0	57.0	95.0
	DROPOUT		54.0	90.0	54.0	90.0

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS
 EQPT. TEMP 23 °C
 TCF TO 20°C 0.98835

NORMAL				
POLE	AS FOUND	20°C	AS LEFT	20°C
A	39.3	38.8422	39.3	38.8422
B	45.5	44.9699	45.5	44.9699
C	47.3	46.749	47.3	46.749
N	39	38.5456	39	38.5456

EMERGENCY				
POLE	AS FOUND	20°C	AS LEFT	20°C
A	66.7	65.9229	66.7	65.9229
B	77.4	76.4983	76.8	75.9053
C	67.7	66.9113	67.7	66.9113
N	60	59.301	60	59.301

TEST EQUIPMENT USED: Megger DLRO10HD

TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS:
DEFICIENCIES:



AUTOMATIC TRANSFER SWITCH TEST

OWNER Grady Memorial Hospital PAGE 39
 ADDRESS 80 Jesse Hill Jr. Dr., SE; Atlanta GA 30303 JOB # 18-4194
 CUSTOMER Grady Health System ASSET ID _____
 ADDRESS 50 Hurt Bldg, Suite 300; Atlanta GA 30303
 DATE 8/17/2018 AMBIENT TEMPERATURE 23 °C HUMIDITY 49 % SITE ED Expansion Building
 SUBSTATION Room 4CM6A EQUIPMENT ATS-4CLD1

NAMEPLATE DATA

MANUFACTURER ASCO SERIAL NO. 1092035 WE TYPE 7000
 CATALOG NO. J07ATBC30260N5XC SYSTEM VOLTAGE 480Y/277 AMPACITY 260
 WIRING NO. 806095 CONTROLS TYPE: ELECTROMECHANICAL SOLID STATE MICROPROCESSOR
 INSTALLED OPTIONS _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	✓	Good	
INSULATING MEMBERS	✓	Good	
MECHANICAL CONNECTIONS	✓	Good	
STRUCTURAL MEMBERS	✓	Good	
MAIN CONTACTS	✓	Good	
ARCING CONTACTS	✓	Good	

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARCING CHUTES	✓	Good	
OPERATING MECHANISM	✓	Good	
CONTACT SEQUENCE	✓	Good	
GROUND CONNECTION	✓	Good	
AUXILIARY DEVICES	✓	Good	
LOAD CONDUCTOR NO. <u>1</u> SIZE <u>350</u>	✓	CU	AL

TIME DELAYS	SPECIFIED		AS FOUND		AS LEFT	
OVERRIDE MOMENTARY OUTAGES ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC			1		1	
TRANSFER TO EMERGENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> SEC			0		0	
NO LOAD ENGINE COOL DOWN ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN			0		0	
RE-TRANSFER TO NORMAL ADJUSTMENT RANGE: FACTORY SET @ <u> </u> MIN			30		30	
SENSOR SETTINGS NOMINAL VOLTAGE: <u>480</u>						
	VOLTS & HZ	%	VOLTZ & HZ	%	VOLTS & HZ	%
NORMAL SOURCE PICKUP VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		432.0	90.0	432.0	90.0
	PHASE B		432.0	90.0	432.0	90.0
	PHASE C		432.0	90.0	432.0	90.0
NORMAL SOURCE DROPOUT VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PHASE A		408.0	85.0	408.0	85.0
	PHASE B		408.0	85.0	408.0	85.0
	PHASE C		408.0	85.0	408.0	85.0
EMERGENCY SOURCE VOLTAGE ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		432.0	90.0	432.0	90.0
	DROPOUT		360.0	75.0	360.0	75.0
EMERGENCY SOURCE FREQUENCY ADJUSTMENT RANGE: FACTORY SET @ <u> </u> %	PICKUP		57.0	95.0	57.0	95.0
	DROPOUT		54.0	90.0	54.0	90.0

POLE RESISTANCE

TESTED FROM LINE TO LOAD TERMINALS

EQPT. TEMP 23 °C
 TCF TO 20°C 0.98835

POLE	AS FOUND	NORMAL		
		20°C	AS LEFT	20°C
A	119.4	118.009	119.4	118.009
B	122.6	121.172	122.6	121.172
C	97.4	96.2653	97.4	96.2653
N	154.2	152.404	154.2	152.404

POLE	AS FOUND	EMERGENCY		
		20°C	AS LEFT	20°C
A	141.7	140.049	141.7	140.049
B	175.6	173.554	175.6	173.554
C	160.2	158.334	160.2	158.334
N	97.9	96.7595	97.9	96.7595

TEST EQUIPMENT USED: Megger DLRO10HD

TESTED BY: David Maney / Shannon George



AUTOMATIC TRANSFER SWITCH TEST

COMMENTS: No transfer operation was performed. Limit Switches operate normally. Switch operates smoothly with no binding.

DEFICIENCIES: