SF6 DEAD TANK CIRCUIT BREAKERS
CAPACITANCE AND POWER FACTOR TESTS

Your Company Logo

OWNER Example Owner

PAGE 1

PLANT Example Plant

AMBIENT TEMP. °F

DATE 10/10/2014

SUBSTATION CIRCUIT BREAKER

HUMIDITY %

JOB # CIRCUIT BREAKERS

POSITION AUTOMATED

ASSET ID

SERIAL NO.
CIRCUIT
MFR
MFR YEAR LOC.
TYPE
MEC. TYPE
MEC. DESIGN
REASON
TANKS CONTROL VOLTS

TEST FREQUENCY 60

SPECIAL ID
A
kV
BIL
INT. RATING
INT. MEDIUM SF6 Gas
WEIGHT lb
WEATHER
TANK TEMP °C
COUNTERS
COOLANT OIL

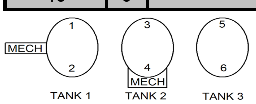
BUSHING NAMEPLATE						
DSG	SERIAL NUM	MFR.	TYPE/CLASS	kV	AMPS	YEAR
H1						
H2						
H3						
X1						
X2						
X3						

PHASE NAMES
CLASS

SF6 VOLUME
LAYOUT

CIRCUIT BREAKER OVERALL TESTS																
CB	TEST NO	INSULATION TESTED	Ph.	TEST MODE	BUSHING CONNECTIONS				TEST kV	Capacitance C (pF)	POWER FACTOR %			DIRECT		IR
					ENG	GND	GAR	UST			MEAS.	20º C	CORR.	mA	WATTS	
OPEN	1	C_{1G}		GST-GND	1								1.000			
	2	C_{2G}		GST-GND	2								1.000			
	3	C_{3G}		GST-GND	3								1.000			
	4	C_{4G}		GST-GND	4								1.000			
	5	C_{5G}		GST-GND	5								1.000			
	6	C_{6G}		GST-GND	6								1.000			
OPEN	7	C_{12}		UST-R	1			2					1.000			
	8	C_{34}		UST-R	3			4					1.000			
	9	C_{56}		UST-R	5			6					1.000			
CLOSED	10	$C_{1G} + C_{2G}$		GST-GND	1&2								1.000			
	11	$C_{3G} + C_{4G}$		GST-GND	3&4								1.000			
	12	$C_{5G} + C_{6G}$		GST-GND	5&6								1.000			

TEST NO.	BUSHING SERIAL #		Ph.	TEST MODE	BUSHING CONNECTIONS				TEST kV	Capacitance C (pF)	POWER FACTOR %			EQUIV		IR
					ENG	GND	GAR	UST			MEAS.	20º C	CORR.	mA	WATTS	
13	1			UST-R	1			TAP								
14	2			UST-R	2			TAP								
15	3			UST-R	3			TAP								
16	4			UST-R	4			TAP								
17	5			UST-R	5			TAP								
18	6			UST-R	6			TAP								



INSULATION TESTED: 1-6 = BUSHING TERMINALS, G=GROUND

Note: Circuit breaker open: bushing tests
(Test No. 1, 2, 3, 4, 5, 6).
Circuit breaker closed: tank tests
(Test No. 7, 8, and 9).

INSULATION RATING: G=GOOD, D=DETERIORATED, I=INVESTIGATE,B=BAD, Q=QUESTIONABLE

NOTE: No. in ENG column is bushing energized, in
Tests 1 through 6, 10, 11 and 12. All other
bushings must be floating.

MULTIPLE QUICK TESTS

TEST EQUIPMENT USED:

TESTED BY: Default Administrator

Serial Number:

Firmware Information:

Calibration Date:

SF6 DEAD TANK CIRCUIT BREAKERS
CAPACITANCE AND POWER FACTOR TESTS

TEST NO	INSULATION TESTED	TEST MODE	SUPPRESS.	TEST kV	Test Freq	L(H) CAP.(pF)	POWER FACTOR %			DIRECT		%VDF	IR
							MEAS.	@ 20°C	CORR.	mA	WATTS		
1		UST-R	On						1.000				

COMMENTS:	
DEFICIENCIES:	

VACUUM BREAKERS
CAPACITANCE AND POWER FACTOR TESTS

OWNER	Example Owner			PAGE	3
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	AUTOMATED	ASSET ID			

SERIAL NO.		SPECIAL ID	
CIRCUIT		A	
MFR		kV	
MFR YEAR	LOC.	BIL	
TYPE		INT. RATING	
MEC. TYPE		INT. MEDIUM	Vacuum
MEC. DESIGN		WEIGHT	lb
REASON		WEATHER	
TANKS	CONTROL VOLTS	TANK TEMP	°C
		COUNTERS	
TEST FREQUENCY	60	COOLANT	OIL

BUSHING NAMEPLATE						
DSG	SERIAL NUM	MFR.	TYPE/CLASS	kV	AMPS	YEAR
H1						
H2						
H3						
X1						
X2						
X3						

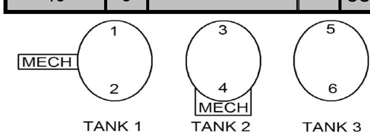
PHASE NAMES

CLASS

LAYOUT

CIRCUIT BREAKER OVERALL TESTS																
CB	TEST NO	INSULATION TESTED	Ph.	TEST MODE	BUSHING CONNECTIONS				TEST kV	Capacitance C (pF)	POWER FACTOR %			DIRECT		IR
					ENG	GND	GAR	UST			MEAS.	20° C	CORR.	mA	WATTS	
OPEN	1	C_{1G}	A	GST-GND	1								1.000			
	2	C_{2G}	A	GST-GND	2								1.000			
	3	C_{3G}	B	GST-GND	3								1.000			
	4	C_{4G}	B	GST-GND	4								1.000			
	5	C_{5G}	C	GST-GND	5								1.000			
	6	C_{6G}	C	GST-GND	6								1.000			
OPEN	7	C_{12}	A	UST-R	1			2					1.000			
	8	C_{34}	B	UST-R	3			4					1.000			
	9	C_{56}	C	UST-R	5			6					1.000			

BUSHING TESTS																
TEST NO.	BUSHING SERIAL #		Ph.	TEST MODE	BUSHING CONNECTIONS				TEST kV	Capacitance C (pF)	POWER FACTOR %			DIRECT		IR
					ENG	GND	GAR	UST			MEAS.	20° C	CORR.	mA	WATTS	
10	1			UST-R	1			TAP								
11	2			UST-R	2			TAP								
12	3			UST-R	3			TAP								
13	4			UST-R	4			TAP								
14	5			UST-R	5			TAP								
15	6			UST-R	6			TAP								



INSULATION RATING: G=GOOD; D=DETERIORATED; I=INVESTIGATE; B=BAD; Q=QUESTIONABLE

INSULATION TESTED
1 to 6 = BUSHING TERMINALS
G = GROUND

NOTES
1) UST test checks grading capacitors across open contacts.
2) No. in ENG column is bushing energized

MULTIPLE QUICK TESTS

TEST EQUIPMENT USED:

TESTED BY: Default Administrator

Serial Number:

Firmware Information:

Calibration Date:

VACUUM BREAKERS
CAPACITANCE AND POWER FACTOR TESTS

TEST NO	INSULATION TESTED	TEST MODE	SUPPRESS.	TEST kV	Test Freq	L(H) CAP.(pF)	POWER FACTOR %			DIRECT		%VDF	IR
							MEAS.	@ 20°C	CORR.	mA	WATTS		
1		UST-R	On						1.000				

COMMENTS:
DEFICIENCIES:

CONTACT RESISTANCE

OWNER	Example Owner	PAGE	5
PLANT	Example Plant	AMBIENT TEMP. °F	DATE 10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY %	JOB # CIRCUIT BREAKERS
POSITION	AUTOMATED	ASSET ID	

CONTACT RESISTANCE IN MILLIOHMS						
	VOLTAGE	CURRENT	RESISTANCE	MINIMUM	MAXIMUM	PASS/FAIL
PHASE A				Ohms	Ohms	
PHASE B				Ohms	Ohms	
PHASE C				Ohms	Ohms	

COMMENTS:
DEFICIENCIES:

TEST EQUIPMENT USED:

TESTED BY: Default Administrator

OIL CIRCUIT RECLOSER

OWNER	Example Owner			PAGE	6
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	AUTOMATED	ASSET ID			

NAMEPLATE INFORMATION	TEST SETTINGS
SERIAL NUMBER:	TCC1:
OF OIL: ____ WEIGHT: ____ LB	TCC2: ____ SHOTS TO LOCKOUT: 0
MAXIMUM kV: ____ BIL: ____ kV	TCC3: ____ NUM. OF TIMING TESTS: 1
MANUFACTURER: COOPER	TCC4: ____ MAXIMUM TOTAL TIME: 20 SECS
MODEL: H	SINGLE SHOT TO LOCKOUT TEST ☑
COIL SIZE: 10 AMPS	USE TIME/CURRENT TOLERANCE FOR LIMITS ☐

	AS FOUND	AS LEFT
COUNTER		
SEQUENCE		

MINIMUM TRIP TEST				SINGLE SHOT TO LOCKOUT	
Minimum Trip Current (amps)	Test Current (amps)	Min Current (amps)	Max Current (amps)	Current (amps)	Single Shot to Lockout

OCR TIMING TEST

TEST MULTIPLE: 4

TOTAL TIME (seconds):

OPERATION	CURVE	CURRENT (amps)	MULTIPLE	TRIP TIME (seconds)	MIN. TIME (seconds)	MAX. TIME (seconds)	RECLOSE (seconds)

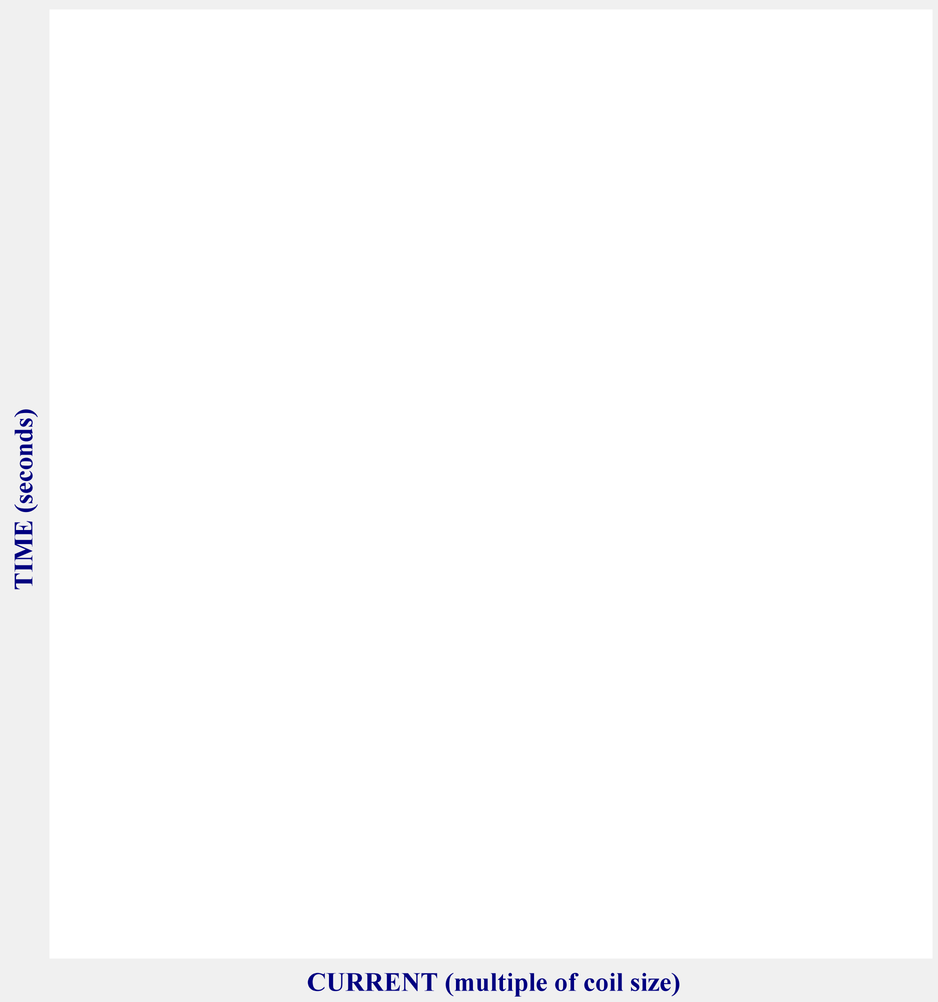
COMMENTS:

DEFICIENCIES:

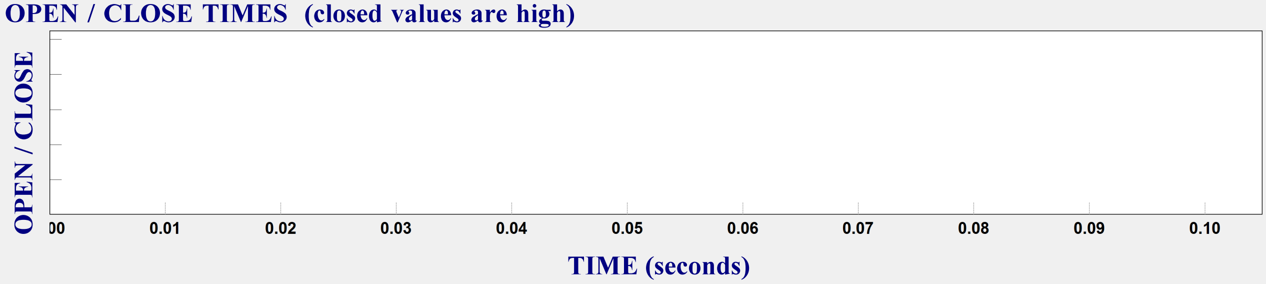
TEST EQUIPMENT USED:

TESTED BY: Default Administrator

TIME Vs CURRENT



OPEN / CLOSE TIMES (closed values are high)



CIRCUIT BREAKER TIMING ANALYSIS

OWNER	Example Owner			PAGE	8
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	AUTOMATED	ASSET ID			

COMMENTS:

DEFICIENCIES:

TEST EQUIPMENT USED:

TESTED BY: Default Administrator

SF6 LIVE TANK CIRCUIT BREAKERS
CAPACITANCE AND POWER FACTOR TESTS

OWNER	Example Owner			PAGE	9
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	AUTOMATED	ASSET ID			

SERIAL NO.		SPECIAL ID					
CIRCUIT		A					
MFR		kV					
MFR YEAR	LOC.	BIL					
TYPE		INT. RATING					
MEC. TYPE		INT. MEDIUM					
MEC. DESIGN		WEIGHT	lb				
REASON		WEATHER					
TANKS	CONTROL VOLTS	TANK TEMP	°C				
		COUNTERS		PHASE NAMES		SF6 VOLUME	
TEST FREQUENCY	60	COOLANT	OIL	CLASS		LAYOUT	

CT NAMEPLATE:

MFR		TYPE		C1 POWER FACTOR %	
MFR YEAR		CLASS		C1 CAPACITANCE	
kV		CATALOG/STYLE		C2 POWER FACTOR %	
AMPS		INSULATION TYPE		C2 CAPACITANCE	

CIRCUIT BREAKER OVERALL TESTS

TEST NO.	INSULATION TESTED	Ph.	TEST CONNECTIONS				TEST kV	CAP. C (pF)	POWER FACTOR %			DIRECT		IR
			ENG	GND	GAR	UST			MEAS.	20º C	CORR.	mA	WATTS	
1	C1	A	H	B		R								
2	C2	A	H	R		B								
3	S1	A	H		RB									
4	C1	B	H	B		R								
5	C2	B	H	R		B								
6	S1	B	H		RB									
7	C1	C	H	B		R								
8	C2	C	H	R		B								
9	S1	C	H		RB									

MULTIPLE QUICK TESTS

TEST NO	INSULATION TESTED	TEST MODE	SUPPRESS.	TEST kV	Test Freq	L(H) CAP.(pF)	POWER FACTOR %			DIRECT		%VDF	IR
							MEAS.	@ 20°C	CORR.	mA	WATTS		
10		UST-R	On						1.000				

COMMENTS:
DEFICIENCIES:

TEST EQUIPMENT USED: TESTED BY: Default Administrator

Serial Number: Firmware Information: Calibration Date:

OIL CIRCUIT BREAKERS
CAPACITANCE AND POWER FACTOR TESTS

OWNER Example Owner
PAGE 11
PLANT Example Plant
AMBIENT TEMP. ______ °F
DATE 10/10/2014
SUBSTATION CIRCUIT BREAKER
HUMIDITY ______ %
JOB # CIRCUIT BREAKERS
POSITION AUTOMATED
ASSET ID ______

SERIAL NO. ______
CIRCUIT ______
MFR ______
MFR YEAR ______ LOC. ______
TYPE ______
MEC. TYPE ______
MEC. DESIGN ______
REASON ______
TANKS ______ CONTROL VOLTS ______
OIL TYPE CONVENTIONAL
TEST FREQUENCY 60

SPECIAL ID ______
A ______
kV ______
BIL ______
INT. RATING ______
INT. MEDIUM Oil
WEIGHT ______ lb
WEATHER ______
OIL TEMP ______ °C
COUNTERS ______
COOLANT OIL

BUSHING NAMEPLATE						
DSG	SERIAL NUM	MFR.	TYPE/CLASS	kV	AMPS	YEAR
H1						
H2						
H3						
X1						
X2						
X3						

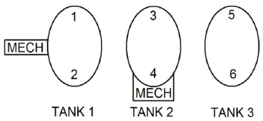
PHASE NAMES ______
CLASS ______
LAYOUT ______

CIRCUIT BREAKER OVERALL TESTS																
CB	TEST NO	INSULATION TESTED	Ph.	TEST MODE	BUSHINGS CONNECTIONS				TEST kV	Cap. (pF)	POWER FACTOR %			DIRECT		IR
					ENG	BUS FT	INS #	TLI			MEAS.	20° C	CORR.	mA	WATTS	
OPEN	1	C_{1G}		GST-GND	1											
	2	C_{2G}		GST-GND	2											
	3	C_{3G}		GST-GND	3											
	4	C_{4G}		GST-GND	4											
	5	C_{5G}		GST-GND	5											
	6	C_{6G}		GST-GND	6											
CLOSED	7	$C_{1G} + C_{2G}$		GST-GND	1&2											
	8	$C_{3G} + C_{4G}$		GST-GND	3&4											
	9	$C_{5G} + C_{6G}$		GST-GND	5&6											

BUSHING AND OIL TESTS															
	TEST NO.		NAMEPLATE			Dsg	Test Mode	TEST kV	Cap. (pF)	POWER FACTOR %			mA	WATTS	IR
			SERIAL #	% PF	CAP.					MEAS.	20° C	CORR.			
C1 TESTS	10	1					UST-R								
	11	2					UST-R								
	12	3					UST-R								
	13	4					UST-R								
	14	5					UST-R								
	15	6					UST-R								
C2 TESTS	16	1					GSTg-R					1.000			
	17	2					GSTg-R					1.000			
	18	3					GSTg-R					1.000			
	19	4					GSTg-R					1.000			
	20	5					GSTg-R					1.000			
	21	6					GSTg-R					1.000			
OIL	22		TANK 1 OIL				UST-R								
	23		TANK 2 OIL				UST-R								
	24		TANK 3 OIL				UST-R								

TEST EQUIPMENT USED: ______
TESTED BY: Default Administrator
Serial Number: ______ Firmware Information: ______ Calibration Date: ______

OIL CIRCUIT BREAKERS
CAPACITANCE AND POWER FACTOR TESTS



INSULATION RATING: G=GOOD; D=DETERIORATED; I=INVESTIGATE;
B=BAD; Q=QUESTIONABLE

NOTE: No. in ENG column is bushing energized,
all other bushings must be floating.

TANK LOSS INDEX
TANK 1 = $W_7 - (W_1 + W_2)$
TANK 2 = $W_8 - (W_3 + W_4)$
TANK 3 = $W_9 - (W_5 + W_6)$

Note: Subscripts are test no.s. Index may be positive or negative.

MULTIPLE QUICK TESTS

TEST NO	INSULATION TESTED	TEST MODE	SUPPRESS.	TEST kV	Test Freq	L(H) CAP.(pF)	POWER FACTOR %			DIRECT		%VDF	IR
							MEAS.	@ 20°C	CORR.	mA	WATTS		
1		UST-R	On						1.000				

COMMENTS:
DEFICIENCIES:

LOW VOLTAGE POWER CIRCUIT BREAKER TEST

OWNER	Example Owner	PAGE	13
PLANT	Example Plant	AMBIENT TEMP. °F	DATE 10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY %	JOB # CIRCUIT BREAKERS
POSITION	AUTOMATED	ASSET ID	

MANUFACTURER		SN / SO NO.		FRAME SIZE(F)	
BREAKER TYPE		SENSOR TAPS		MOUNTING	○ D.O. ○ B.I.
FUSE CAT. NO.		CUBICLE CODE		THERMAL MEMORY	○ ON ○ OFF
TRIP UNIT TYPE		CATALOG NO.		ZONE INTLK ☐	TARGETS ☐

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
CUBICLE AND RACKING DEVICES	☐		
CONTACT FINGERS	☐		
LOADING AND ARCING CONTACTS	☐		
OVERCURRENT DEV. BATTERY	☐		

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARC CHUTES	☐		
AUXILIARY DEVICES	☐		
GROUND CONNECTION	☐		
LOAD CONDUCTOR NO.	SIZE	CU ○	AL ○

SETTINGS AS FOUND	FUNCTION		PICKUP	DELAY	CURVE	DRAWING
RATING PLUG(R)	LONG	☑	x A = A			
SENSOR TAP	SHORT	☐				
	INST.	☐				
GRD. FLT. ○ 3W ○ 4W	GRD. FLT.	☐				

SETTINGS AS LEFT	FUNCTION		PICKUP	DELAY	CURVE	DRAWING
RATING PLUG(R)	LONG	☑	x A = A			
SENSOR TAP	SHORT	☐				
	INST.	☐				
GRD. FLT. ○ 3W ○ 4W	GRD. FLT.	☐				

☐ PAIR CURRENT AND TIME ON ALL TESTS

FUNCTION	TEST AMPERES	CURRENT MULTIPLE	TIME BAND MINIMUM	TIME BAND MAXIMUM	POLE 1 AS FOUND (seconds)	POLE 1 AS LEFT (seconds)	POLE 2 AS FOUND (seconds)	POLE 2 AS LEFT (seconds)	POLE 3 AS FOUND (seconds)	POLE 3 AS LEFT (seconds)
LONG TIME										
	LTPU (amps)									
	VOLTAGE DROP @ LONG TIME TEST CURRENT									
SHORT TIME										
	STPU (amps)									
INSTANTANEOUS										
	IPU (amps)									
GROUND FAULT										
	GFPU (amps)									

EQUIPMENT TEMPERATURE ____ °C TEMPERATURE CORRECTION FACTOR TO 20°C, TCF ____

INSULATION RESISTANCE	POLE 1 MΩ (P1-P2) READING	POLE 1 20°C	POLE 2 MΩ (P2-P3) READING	POLE 2 20°C	POLE 3 MΩ (P3-P1) READING	POLE 3 20°C
POLE TO POLE						
POLE TO FRAME						
LINE TO LOAD						

POLE RESISTANCE - MICRO-OHMS READING		
POLE 1	POLE 2	POLE 3

CONTROL WIRING				COUNTER READING BEG/END	
READING		20°C			

COMMENTS:
DEFICIENCIES:

TEST EQUIPMENT USED: TESTED BY: Default Administrator

OCR COUNTER

OWNER	Example Owner			PAGE	14
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	AUTOMATED	ASSET ID			

NAMEPLATE INFORMATION

SERIAL NUMBER:				MANUFACTURER:	COOPER
OF OIL:		WEIGHT:	LB	COIL SIZE:	10 AMPS
MAXIMUM kV:		BIL:	kV	MODEL:	H

LAST MAINTENANCE DATE:	10/10/2014
OPERATIONS COUNTER:	0

SINCE LAST MAINTENANCE:	
# OF OPERATIONS:	0
# OF MONTHS:	0

DATE	COUNTER	COMMENTS

TEST EQUIPMENT USED:

TESTED BY: Default Administrator

MOLDED CASE CIRCUIT BREAKER INSPECTION REPORT

OWNER: Example Owner
PAGE: 15

PLANT: Example Plant
AMBIENT TEMP. ______ °F
DATE: 10/10/2014

SUBSTATION: CIRCUIT BREAKER
HUMIDITY ______ %
JOB #: CIRCUIT BREAKERS

POSITION: AUTOMATED
ASSET ID ______

BREAKER DATA

MANUFACTURER ______ TYPE ______ VOLTAGE ______

SERIAL NUMBER ______ FRAME SIZE ______ INT. RATING ______

THERMAL ELEMENT

NON-ADJUSTABLE ______

ADJUSTABLE ______

RANGE ______ SETTING ______

MAGNETIC ELEMENT

NON-ADJUSTABLE ______

ADJUSTABLE ______

RANGE ______ SETTING ______

FRONT IDENTIFICATION - LEFT TO RIGHT:		POLE 1		POLE 2		POLE 3	
		AS FOUND	AS LEFT	AS FOUND	AS LEFT	AS FOUND	AS LEFT
CONTACT RESISTANCE IN MICROHMS							
TIME AT 300% RATED CURRENT IN SECONDS							
INST. TESTED ON ______ SETTING	TRIP						
	NO TRIP						
	ACROSS OPEN POLE						
	POLE - POLE - GND						

COMMENTS:

DEFICIENCIES:

TEST EQUIPMENT USED: ______

TESTED BY: Default Administrator

VACUUM RECLOSERS
CAPACITANCE AND POWER FACTOR TESTS

OWNER	Example Owner			PAGE	16
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	AUTOMATED	ASSET ID			

SERIAL NO.		SPECIAL ID	
CIRCUIT		A	
MFR		kV	
MFR YEAR	LOC.	BIL	
TYPE		INT. RATING	
MEC. TYPE		INT. MEDIUM	
MEC. DESIGN		WEIGHT	lb
REASON		WEATHER	
TANKS	CONTROL VOLTS	TANK TEMP	°C
		COUNTERS	
TEST FREQUENCY	60	COOLANT	OIL

BUSHING NAMEPLATE						
DSG	SERIAL NUM	MFR.	TYPE/CLASS	kV	AMPS	YEAR
H1						
H2						
H3						
X1						
X2						
X3						

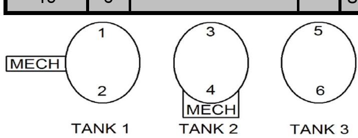
PHASE NAMES

CLASS

LAYOUT

VACUUM RECLOSER OVERALL TESTS																
CB	TEST NO	INSULATION TESTED	Ph.	TEST MODE	BUSHING CONNECTIONS				TEST kV	Capacitance C (pF)	POWER FACTOR %			DIRECT		IR
					ENG	GND	GAR	UST			MEAS.	20º C	CORR.	mA	WATTS	
OPEN	1	C_{1G}	A	GST-GND	1								1.000			
	2	C_{2G}	A	GST-GND	2								1.000			
	3	C_{3G}	B	GST-GND	3								1.000			
	4	C_{4G}	B	GST-GND	4								1.000			
	5	C_{5G}	C	GST-GND	5								1.000			
	6	C_{6G}	C	GST-GND	6								1.000			
OPEN	7	C_{12}		UST-R	1			2					1.000			/
	8	C_{34}		UST-R	3			4					1.000			/
	9	C_{56}		UST-R	5			6					1.000			/

BUSHING & OIL TESTS																
TEST NO.	BUSHING SERIAL #		Ph.	TEST MODE	BUSHING CONNECTIONS				TEST kV	Capacitance C (pF)	POWER FACTOR %			DIRECT		IR
					ENG	GND	GAR	UST			MEAS.	20º C	CORR.	mA	WATTS	
10	1			UST-R	1			TAP								
11	2			UST-R	2			TAP								
12	3			UST-R	3			TAP								
13	4			UST-R	4			TAP								
14	5			UST-R	5			TAP								
15	6			UST-R	6			TAP								



INSULATION RATING: G=GOOD; D=DETERIORATED; I=INVESTIGATE; B=BAD; Q=QUESTIONABLE

INSULATION TESTED

1 to 6 = BUSHING TERMINALS

G = GROUND

NOTE: Circuit breaker open: bushing tests (Test No. 1, 2, 3, 4, 5, 6).
Circuit breaker closed: tank tests (Test No. 7, 8, and 9).

NOTE: No. in ENG column is bushing energized in Tests 1 through 6, 10, 11 and 12. All other bushings must be floating.

MULTIPLE QUICK TESTS

TEST EQUIPMENT USED:

TESTED BY: Default Administrator

Serial Number:

Firmware Information:

Calibration Date:

VACUUM RECLOSERS
CAPACITANCE AND POWER FACTOR TESTS

TEST NO	INSULATION TESTED	TEST MODE	SUPPRESS.	TEST kV	Test Freq	L(H) CAP.(pF)	POWER FACTOR %			DIRECT		%VDF	IR
							MEAS.	@ 20°C	CORR.	mA	WATTS		
1		UST-R	On						1.000				

COMMENTS:

DEFICIENCIES:

SF6 LIVE TANK CIRCUIT BREAKERS
CAPACITANCE AND POWER FACTOR TESTS

OWNER	Example Owner			PAGE	18
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	AUTOMATED	ASSET ID			

SERIAL NO.		SPECIAL ID	
CIRCUIT		A	
MFR		kV	
MFR YEAR	LOC.	BIL	
TYPE		INT. RATING	
MEC. TYPE		INT. MEDIUM	
MEC. DESIGN		WEIGHT	lb
REASON		WEATHER	
TANKS	CONTROL VOLTS	TANK TEMP	°C
		COUNTERS	
TEST FREQUENCY	60	COOLANT	OIL

BUSHING NAMEPLATE						
DSG	SERIAL NUM	MFR.	TYPE/CLASS	kV	AMPS	YEAR
H1						
H2						
H3						
X1						
X2						
X3						

PHASE NAMES		SF6 VOLUME	
CLASS		LAYOUT	

CT NAMEPLATE:

MFR		TYPE		C1 POWER FACTOR %	
MFR YEAR		CLASS		C1 CAPACITANCE	
kV		CATALOG/STYLE		C2 POWER FACTOR %	
AMPS		INSULATION TYPE		C2 CAPACITANCE	

CIRCUIT BREAKER OVERALL TESTS											
TEST NO	CAP.	Ph.		TEST kV	CAP. C (pF)	POWER FACTOR %			DIRECT		IR
						MEAS.	20º C	CORR.	mA	WATTS	
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

TEST EQUIPMENT USED: TESTED BY: Default Administrator

Serial Number: Firmware Information: Calibration Date:

SF6 LIVE TANK CIRCUIT BREAKERS
CAPACITANCE AND POWER FACTOR TESTS

CIRCUIT BREAKER CT TESTS

TEST NO	TEST MODE	ENG		TEST kV	CAP. C (pF)	POWER FACTOR %			EQUIV		IR
						MEAS.	20° C	CORR.	mA	WATTS	
16	GSTg-R										
17	GSTg-R										
18	GSTg-R										
19	GSTg-R										
20	GSTg-R										
21	GSTg-R										
22	GSTg-R										
23	GSTg-R										
24	GSTg-R										
25	GSTg-R										
26	GSTg-R										
27	GSTg-R										

MULTIPLE QUICK TESTS

TEST NO	INSULATION TESTED	TEST MODE	SUPPRESS.	TEST kV	Test Freq	L(H) CAP.(pF)	POWER FACTOR %			DIRECT		%VDF	IR
							MEAS.	@ 20°C	CORR.	mA	WATTS		
1		UST-R	On						1.000				

COMMENTS:

DEFICIENCIES:

AIR-MAGNETIC CIRCUIT BREAKERS
CAPACITANCE and POWER FACTOR TESTS

OWNER Example Owner

PAGE 20

PLANT Example Plant

AMBIENT TEMP. °F

DATE 10/10/2014

SUBSTATION CIRCUIT BREAKER

HUMIDITY %

JOB # CIRCUIT BREAKERS

POSITION AUTOMATED

ASSET ID

SERIAL NO.
CIRCUIT
MFR
MFR YEAR LOC.
TYPE
MEC. TYPE
MEC. DESIGN
REASON
TANKS CONTROL VOLTS

TEST FREQUENCY *60*

SPECIAL ID
A
kV
BIL
INT. RATING
INT. MEDIUM Air
WEIGHT lb
WEATHER
TANK TEMP °C
COUNTERS
COOLANT OIL

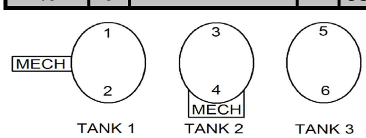
BUSHING NAMEPLATE						
DSG	SERIAL NUM	MFR.	TYPE/CLASS	kV	AMPS	YEAR
H1						
H2						
H3						
X1						
X2						
X3						

PHASE NAMES
CLASS

LAYOUT

CIRCUIT BREAKER OVERALL TESTS																
CB	TEST NO.	INSULATION TESTED	Ph.	TEST MODE	TEST CONNECTIONS BUSHING				TEST kV	Capacitance C (pF)	POWER FACTOR %			DIRECT		IR
					ENG	GND	GAR	UST			MEAS.	20º C	CORR.	mA	WATTS	
OPEN	1	C_{1G}		GSTg-RB	1		2									
	2	C_{2G}		GSTg-RB	2		1									
	3	C_{3G}		GSTg-RB	3		4									
	4	C_{4G}		GSTg-RB	4		3									
	5	C_{5G}		GSTg-RB	5		6									
	6	C_{6G}		GSTg-RB	6		5									
OPEN	7	C_{12}		UST-R	1			2								
	8	C_{34}		UST-R	3			4								
	9	C_{56}		UST-R	5			6								

BUSHING TESTS																
TEST NO.	BUSHING SERIAL #		Ph.	TEST MODE	ENG	GND	GAR	UST	TEST kV	CAP. C(pF)	MEAS.	20º C	CORR.	mA	WATTS	IR
10	1			UST-R	1											
11	2			UST-R	2											
12	3			UST-R	3											
13	4			UST-R	4											
14	5			UST-R	5											
15	6			UST-R	6											



INSULATION RATING: G=GOOD; D=DETERIORATED; I=INVESTIGATE; B=BAD; Q=QUESTIONABLE

INSULATION TESTED
1 to 6 = BUSHING TERMINALS
G = GROUND

NOTES
1) UST test checks grading capacitors across open contacts.
2) No. in ENG column is bushing energized

MULTIPLE QUICK TESTS

TEST NO	INSULATION TESTED	TEST MODE	SUPPRESS.	TEST kV	Test Freq	L(H) CAP.(pF)	POWER FACTOR %			DIRECT		%VDF	IR
							MEAS.	@ 20°C	CORR.	mA	WATTS		
1		UST-R	On						1.000				

TEST EQUIPMENT USED:

TESTED BY: Default Administrator

Serial Number:

Firmware Information:

Calibration Date:

AIR-MAGNETIC CIRCUIT BREAKERS
CAPACITANCE and POWER FACTOR TESTS

COMMENTS:	
DEFICIENCIES:	

VACUUM IN OIL RECLOSER TEST

OWNER Example Owner
PAGE 22
PLANT Example Plant
AMBIENT TEMP. °F
DATE 10/10/2014
SUBSTATION CIRCUIT BREAKER
HUMIDITY %
JOB # CIRCUIT BREAKERS
POSITION GENERAL
ASSET ID

NAMEPLATE DATA

MANUFACTURER ______ DATE MANUFACTURED ______

TYPE ______ INST. BOOK ______ SERIAL NUMBER ______

VOLTAGE ______ AMPERES ______ NO. TANKS ______ GALLONS PER TANK ______

INTERRUPTING RATING ______ MECHANISM TYPE ______ MOTOR VOLTAGE ______

CLOSE COIL VOLTAGE ______ TRIP COIL VOLTAGE ______

TEST AND MEASUREMENT DATA

OIL LEVEL (IF UNIT HAS ONLY ONE TANK INSERT DATA IN ANY ONE PHASE)

PHASE A ______ PHASE B ______ PHASE C ______

OIL DIELECTRIC (kV) AS FOUND / AS LEFT

PHASE A / PHASE B / PHASE C /

CONTACT RESISTANCE (MICROHMS)

PHASE A ______ PHASE B ______ PHASE C ______

VACUUM INTEGRITY TEST

PHASE A ______ PHASE B ______ PHASE C ______

OPERATIONS COUNTER

AS FOUND ______ AS LEFT ______

RELAY FUNCTION TRIP TEST

PHASE A ______ PHASE B ______ PHASE C ______ GROUND ______

RECLOSING RELAY ______ RECLOSER INTERVALS (SEC) (1) ______ (2) ______ (3) ______ (4) ______

MECHANICAL INSPECTION

COMPONENT	AS FOUND	AS LEFT	COMPONENT	AS FOUND	AS LEFT	COMPONENT	AS FOUND	AS LEFT
BUSHINGS / GASKETS			VACUUM BOTTLE			DRAINS / VALVES		
ARC BAFFLES			CONDITION			CONTROL BOX CONDITION		
BARRIERS			OPERATING LINKS			OVERALL CLEANLINESS		
OPERATING MECHANISM			TRIP BAR					
TANK LINERS			TANK GASKET					
CONNECTIONS			OIL CONDITION					

COMMENTS:
DEFICIENCIES:

TEST EQUIPMENT USED: ______ TESTED BY: Default Administrator

VACUUM CIRCUIT BREAKER TEST

OWNER	Example Owner			PAGE	23
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	GENERAL	ASSET ID			

MANUFACTURER				SERIAL NUMBER			
TYPE		MODEL NO.		DATE MANUFACTURED			
MAXIMUM VOLTAGE	kV	AMPACITY		OPERATING VOLTAGE	kV		
INTERRUPTING CAPACITY	kA	@	kV	TO	kV =		mVA

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE	DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	☐			CONTACT FINGERS	☐		
INSULATING MEMBERS	☐			VACUUM BOTTLE	☐		
MECHANICAL CONNECTIONS	☐			CONTACT EROSION INDICATOR	☐		
STRUCTURAL MEMBERS	☐			OPERATING MECHANISM	☐		
CUBICLE	☐			CONTACT SEQUENCE	☐		
RACKING DEVICES	☐			GROUND CONNECTION	☐		
SHUTTER	☐			AUXILIARY DEVICES	☐		

INSULATION TEST VOLTAGE ______ kVDC EQUIPMENT TEMPERATURE ______ °C TEMPERATURE CORRECTION FACTOR TO 20°C, TCF ______

MILLIWATT LOSS TEST VOLTAGE ______ kVAC HIGH POTENTIAL TEST VOLTAGE ______ kVDC

INSULATION RESISTANCE	POLE 1 MEGOHMS (P1-P2)		POLE 2 MEGOHMS (P2-P3)		POLE 3 MEGOHMS (P1-P3)	
	READING	20°C	READING	20°C	READING	20°C
POLE TO POLE						
POLE TO FRAME						
LINE TO FRAME						
LOAD TO FRAME						
LINE TO LOAD						

CONTROL WIRING - MEGOHMS			
READING		20°C	

0

	POLE 1	POLE 2	POLE 3
HIGH POTENTIAL kVDC			
MILLIWATT LOSS kVDC			

CONTACT MEASUREMENTS

		POLE 1	POLE 2	POLE 3
CONTACT TRAVEL - INCHES				
POLE RESISTANCE MICRO-OHMS	RDG.			
	20°C			
CONTACT RESISTANCE MICRO-OHMS	RDG.			
	20°C			

	POLE 1	POLE 2	POLE 3
OPENING SPEED (ft/sec)			
CLOSING SPEED (ft/sec)			

COUNTER READING: BEG. ______

END ______

COMMENTS:
DEFICIENCIES:

TEST EQUIPMENT USED: ______ TESTED BY: Default Administrator

LOW VOLTAGE POWER CIRCUIT BREAKER TEST

OWNER	Example Owner			PAGE	24
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	GENERAL	ASSET ID			

MANUFACTURER		SN / SO NO.		FRAME SIZE(F)	
BREAKER TYPE		SENSOR TAPS		MOUNTING	○ B.I. ○ D.O.
FUSE CAT. NO.		CUBICLE CODE		THERMAL MEMORY	○ ON ○ OFF
TRIP UNIT TYPE		CATALOG NO.		ZONE INTLK ☐	TARGETS ☐

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE	DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
CUBICLE AND RACKING DEVICES	☐			ARC CHUTES	☐		
CONTACT FINGERS	☐			AUXILIARY DEVICES	☐		
LOADING AND ARCING CONTACTS	☐			GROUND CONNECTION	☐		
OVERCURRENT DEV. BATTERY	☐			LOAD CONDUCTOR NO. 0	Size		CU ○ AL ○

SETTINGS AS FOUND

		LONG TIME PU	x	A =	A	DELAY	
RATING PLUG(R)		SHORT TIME PU	=	A		DELAY	I²T ○ IN ○ OUT ○ N/A
SENSOR TAP		INST. PU	=	A	○ ON ○ OFF		
GRD. FLT.	○ 3W ○ 4W	GRD. FLT. PU	=	A	○ ON ○ OFF	DELAY	I²T ○ IN ○ OUT ○ N/A

SETTINGS AS LEFT

		LONG TIME PU	x	A =	A	DELAY	
RATING PLUG(R)		SHORT TIME PU	=	A		DELAY	I²T ○ IN ○ OUT ○ N/A
SENSOR TAP		INST. PU	=	A	○ ON ○ OFF		
GRD. FLT.	○ 3W ○ 4W	GRD. FLT. PU	=	A	○ ON ○ OFF	DELAY	I²T ○ IN ○ OUT ○ N/A

TCC NO.

FUNCTION	TEST AMPERES	CURRENT MULTIPLE	TIME BAND MINIMUM	TIME BAND MAXIMUM	POLE 1 AS FOUND (seconds)	POLE 1 AS LEFT (seconds)	POLE 2 AS FOUND (seconds)	POLE 2 AS LEFT (seconds)	POLE 3 AS FOUND (seconds)	POLE 3 AS LEFT (seconds)
INSTANTANEOUS										
	IPU									
SHORT TIME										
	STPU									
LONG TIME										
	LTPU									
	VOLTAGE DROP @ LONG TIME TEST CURRENT									
GROUND FAULT										
	GFPU									

EQUIPMENT TEMPERATURE °C   TEMPERATURE CORRECTION FACTOR TO 20°C, TCF

INSULATION RESISTANCE	POLE 1 MΩ (P1-P2) READING	POLE 1 20°C	POLE 2 MΩ (P2-P3) READING	POLE 2 20°C	POLE 3 MΩ (P3-P4) READING	POLE 3 20°C
POLE TO POLE						
POLE TO FRAME						
LINE TO LOAD						

CONTROL WIRING			COUNTER READING BEG/END	
READING		20°C		

POLE RESISTANCE - MICRO-OHMS READING		
POLE 1	POLE 2	POLE 3

COMMENTS:

DEFICIENCIES:

TEST EQUIPMENT USED: TESTED BY: Default Administrator

CIRCUIT BREAKER INSULATING FLUID

OWNER	Example Owner	PAGE	25
PLANT	Example Plant	AMBIENT TEMP. ___ °F	DATE 10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY ___ %	JOB # CIRCUIT BREAKERS
POSITION	GENERAL	ASSET ID ___	

NAMEPLATE DATA

MANUFACTURER ___ SERIAL NO. ___ TYPE ___

MODEL NO. ___ DATE MANUFACTURED ___ AMPERES ___

RATED MAXIMUM VOLTS ___ kV VOLTAGE RANGE FACTOR ___ B.I.L. ___ kV

SHORT CIRCUIT CURRENT (SYM) ___ kA RATED INTERRUPTING TIME ___ MECHANISM TYPE ___

TOTAL WEIGHT ___ LIQUID CAPACITY ___ GAL INST. BOOKLET ___

INTERRUPTING RATING ___ kA @ ___ kV NUMBER OF TANKS ___ VOLTAGE ___

PLUMBING TABLE

TOP	
BOTTOM	
VENT	
ACCESS PORT	

TEST RESULTS

	POLE 1	POLE 2	POLE 3
PARTICLES			
DIELECTRIC STRENGTH - kV			
INTERFACIAL TENSION - d/cm			
ACIDITY - mg KOH/g			
ASTM COLOR NO.			
PARTS PER MILLION PCB			
E. P. A. CLASSIFICATION			
POWER FACTOR - %			
WATER CONTENT - PPM			
SPECIFIC GRAVITY			

BREAKER INSPECTION

PAINT CONDITION ___

GASKETS ___

BUSHINGS ___

LIQUID LEVEL ___

TANK GROUNDS ___

COUNTER READING ___

POLE CONFIGURATION

MECH POLE 1 POLE 2 POLE 3

MECH

ANALYSIS OF TEST RESULTS

CONDITION	**SERVICE**
○ EXCELLENT	☐ NO SERVICE REQUIRED
○ GOOD	☐ RETEST IN ___ MONTHS:
○ INVESTIGATE	☐ SERVICE REQUIRED
○ POOR	☐ SERVICE IMMEDIATELY
○ FAILED UNIT	☐ REFER TO COMMENTS

COMMENTS:
DEFICIENCIES:

TEST EQUIPMENT USED: ___ TESTED BY: Default Administrator

MOLDED CASE CIRCUIT BREAKER TEST

OWNER	Example Owner			PAGE	26
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	GENERAL	ASSET ID			

MANUFACTURER		SN / SO NO.		FRAME SIZE(F)	
BREAKER TYPE		SENSOR TAPS		MOUNTING	○ B.I. ○ D.O.
FUSE CAT. NO.		CUBICLE CODE		THERMAL MEMORY	○ ON OFF
TRIP UNIT TYPE		CATALOG NO.		ZONE INTLK ☐	TARGETS ☐

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
CUBICLE AND RACKING DEVICES	☐		
CONTACT FINGERS	☐		
LOADING AND ARCING CONTACTS	☐		
OVERCURRENT DEV. BATTERY	☐		

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
ARC CHUTES	☐		
AUXILIARY DEVICES	☐		
GROUND CONNECTION	☐		
LOAD CONDUCTOR NO. 0	Size		CU ○ AL ○

	SETTINGS (seconds)	TEST (seconds)	LONG TIME (seconds)	INSTANTANEOUS (seconds)
SHORT DELAY PICKUP:				
SHORT DELAY TIME:				
LONG TIME PHASE A:				
LONG TIME PHASE B:				
LONG TIME PHASE C:				

MEGGER TEST IN MEGAOHMS	
A - B	
B - C	
C - A	
A - G	
B - G	
C - G	
OPEN POLES	
A -	
B -	
C -	

CONTACT RESISTANCE IN MILLIOHMS	
PHASE A:	
PHASE B:	
PHASE C:	

COMMENTS:
DEFICIENCIES:

TEST EQUIPMENT USED: TESTED BY: Default Administrator

OIL CIRCUIT BREAKER TEST

OWNER	Example Owner			PAGE	27
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	GENERAL	ASSET ID			

NAMEPLATE DATA

MANUFACTURER		SERIAL NO.		TYPE	
MODEL NO.		DATE MANUFACTURED		VOLTAGE	kV
AMPERES		TYPE OPERATING MECHANISM		TOTAL WEIGHT	LBS
INTERRUPTING RATING	kA @ kV	NUMBER OF TANKS		TOTAL FLUID CAP.	GAL

OVERCURRENT PROTECTION

DIRECT TRIP COIL OPERATED ☐

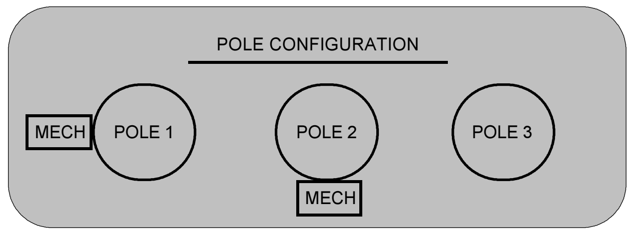
RELAY OPERATED ☐ REACTOR TRIP ○

RANGE ______ CAPACITOR TRIP ○

DC TRIP ○

OVERCURENT RELAY TESTED: YES ○ NO ○

CURRENT TRANSFORMER RATIO ______ :5



DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	☐		
INSULATING MEMBERS	☐		
MECHANICAL CONNECTIONS	☐		
STRUCTURAL MEMBERS	☐		
TANK RACKING DEVICE	☐		
OPERATING MECHANISM	☐		
LINKAGE	☐		
BEARINGS	☐		
BUSHINGS / GASKETS	☐		

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OIL GAUGES	☐		
TANK LINERS	☐		
MAIN CONTACTS	☐		
ARCING CONTACTS	☐		
CLOSING SEQUENCE	☐		
GROUND CONNECTION	☐		
VISUAL OIL CONDITION	☐		
OIL TESTED	☐		
DRAINED, CLEANED AND REFILLED WITH NEW OIL: ○ YES ○ NO			

INSULATION TEST VOLTAGE ______ kVDC EQUIPMENT TEMPERATURE ______ °C TEMPERATURE CORRECTION FACTOR TO 20°C, TCF ______

INSULATION RESISTANCE

		POLE 1 MEGOHMS (P1-P2)		POLE 2 MEGOHMS (P2-P3)		POLE 3 MEGOHMS (P1-P3)	
		READING	20°C	READING	20°C	READING	20°C
POLE TO POLE	CLOSED						
POLE TO FRAME							
LINE TO FRAME	OPEN						
LOAD TO FRAME							
LINE TO LOAD							
LIFT RODS							

CONTACT MEASUREMENTS

	POLE 1	POLE 2	POLE 3
ARCING CONTACT WIPE (inches)			
MAIN CONTACT WIPE (inches)			
MAIN CONTACT GAP (inches)			
MAIN CONTACT TRAVEL (inches)			

CONTROL WIRING - MEGOHMS				
READING		20°C		
		POLE 1	POLE 2	POLE 3
CONTACT RESISTANCE MICRO-OHMS	RDG.			
	20°C			

COUNTER READING: BEG. ______ END ______

COMMENTS:

DEFICIENCIES:

TEST EQUIPMENT USED: ______ TESTED BY: Default Administrator

LOW VOLTAGE POWER CIRCUIT BREAKER INSULATION TEST AND INSPECTION

Your Company Logo

OWNER Example Owner
PAGE 28
PLANT Example Plant
AMBIENT TEMP. °F
DATE 10/10/2014
SUBSTATION CIRCUIT BREAKER
HUMIDITY %
JOB # CIRCUIT BREAKERS
POSITION GENERAL
ASSET ID

MANUFACTURER
SN / SO NO.
FRAME SIZE(F)
BREAKER TYPE
SENSOR TAPS
MOUNTING ◯ B.I. ◯ D.O.
FUSE CAT. NO.
CUBICLE CODE
TRIP UNIT TYPE
CATALOG NO.
ZONE INTLK ☐
TARGETS ☐

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	☐		
INSULATING MEMBERS	☐		
STRUCTURAL MEMBERS	☐		
CUBICLES	☐		
RACKING DEVICES	☐		
SHUTTER	☐		
OVERCURRENT DEV. BATTERY	☐		

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
CONTACT FINGERS	☐		
MAIN CONTACTS	☐		
ARCING CONTACTS	☐		
OPERATING MECHANISM	☐		
CONTACT SEQUENCE	☐		
GROUND CONNECTION	☐		
AUXILIARY DEVICES	☐		

SETTINGS AS FOUND

LONG TIME PU x A = A DELAY
RATING PLUG(R) SHORT TIME PU = A DELAY I^2T ◯ IN ◯ OUT ◯ N/A
SENSOR TAP INST. PU = A ◯ ON ◯ OFF
GRD. FLT. ◯ 3W ◯ 4W GRD. FLT. PU = A ◯ ON ◯ OFF DELAY I^2T ◯ IN ◯ OUT ◯ N/A

SETTINGS AS LEFT

LONG TIME PU x A = A DELAY
RATING PLUG(R) SHORT TIME PU = A DELAY I^2T ◯ IN ◯ OUT ◯ N/A
SENSOR TAP INST. PU = A ◯ ON ◯ OFF
GRD. FLT. ◯ 3W ◯ 4W GRD. FLT. PU = A ◯ ON ◯ OFF DELAY I^2T ◯ IN ◯ OUT ◯ N/A

EQUIPMENT TEMPERATURE °C
TEMPERATURE CORRECTION FACTOR TO 20°C, TCF

	POLE 1 MΩ (P1-P2)		POLE 1 MΩ (P2-P3)		POLE 1 MΩ (P1-P3)	
	READING	20°C	READING	20°C	READING	20°C
POLE TO POLE						
POLE TO FRAME						
LINE TO LOAD						

POLE RESISTANCE (MICRO-OHMS) READING		
POLE 1	POLE 2	POLE 3

CONTROL WIRING - MEGOHMS			
READING		20°C	

COMMENTS:
DEFICIENCIES:

TEST EQUIPMENT USED:
TESTED BY: Default Administrator

MEDIUM VOLTAGE CIRCUIT BREAKER
INSULATING FLUID TEST

OWNER	Example Owner			PAGE	29
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	GENERAL	ASSET ID			

NAMEPLATE DATA

MANUFACTURER		SERIAL NO.		TYPE	
MODEL NO.		DATE MANUFACTURED		VOLTAGE	kV
AMPERES		TYPE OPERATING MECHANISM		TOTAL WEIGHT	LBS
INTERRUPTING RATING	kA @ kV	NUMBER OF TANKS		TOTAL FLUID CAP.	GAL
INTERRUPTING RATING	kA @ kV				
VOLTAGE RANGE FACTOR	BIL kV				
SHORT CIRCUIT WITHSTAND (SYM)	kV				
RATED INTERRUPTING TIME	CYCLES				
INSTRUCTION BOOKLET					

POLE CONFIGURATION

A = ○

B = ○

A MECH POLE 1 POLE 2 POLE 3

MECH

B

TEST RESULTS	POLE 1	POLE 2	POLE 3
PARTICLES			
DIELECTRIC STRENGTH - kV			
INTERFACIAL TENSION - d/cm			
ACIDITY - mg KOH/g			
ASTM COLOR NO.			
PCB CONTENT - PPM			
E. P. A. CLASSIFICATION			
POWER FACTOR - %			
PARTS PER MILLION OF WATER			

DISSLOVED GAS ANALYSIS	POLE 1	POLE 2	POLE 3
HYDROGEN - (H2)			
OXYGEN - (O2)			
NITROGEN - (N2)			
*METHANE - (CH4)			
*CARBON MONOXIDE - (CO)			
CARBON DIOXIDE - (CO2)			
*ETHYLENE - (C2H4)			
*ETHANE - (C2H6)			
*ACETYLENE - (C2H2)			
TOTAL GAS CONTENT - (%)			
COMBUSTIBLE GAS CONTENT			

* COMBUSTIBLE GAS

VISUAL INSPECTION	POLE 1	POLE 2	POLE 3
TOP VALVE SIZE			
BOTTOM VALVE SIZE			
VENTS / PRESSURE RELIEF			
VISIBLE LEAKS			
HIGH TEMPERATURE READING			
PRESENT TEMPERATURE READING			
PRESSURE READING			
VACUUM READING			
PAINT CONDITION			
GASKETS CONDITION			
BUSHING CONDITION			
EQUIPMENT GROUNDED			
COUNTER READING	AF =		AL =

ANALYSIS OF FLUID TEST RESULTS

CONDITION	SERVICE
○ EXCELLENT	☐ NO SERVICE REQUIRED
○ GOOD	☐ RETEST IN ___MONTHS:
○ INVESTIGATE	☐ SERVICE REQUIRED
○ POOR	☐ SERVICE IMMEDIATELY
○ FAILED UNIT	☐ REFER TO COMMENTS

COMMENTS:

DEFICIENCIES:

TEST EQUIPMENT USED:

TESTED BY: Default Administrator

MEDIUM VOLTAGE AIR CIRCUIT BREAKER TEST

OWNER	Example Owner			PAGE	30
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	GENERAL	ASSET ID			

MANUFACTURER				SERIAL NUMBER	
TYPE		MODEL NO.		DATE MANUFACTURED	
MAXIMUM VOLTAGE	kV	AMPACITY		OPERATING VOLTAGE	kV

INTERRUPTING CAPACITY ______ kA @ ______ kV TO ______ kV = ______ mVA

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS	☐		
INSULATING MEMBERS	☐		
MECHANICAL CONNECTIONS	☐		
STRUCTURAL MEMBERS	☐		
CUBICLE	☐		
RACKING DEVICES	☐		
SHUTTER	☐		
CONTACT FINGERS	☐		

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
MAIN CONTACTS	☐		
ARCING CONTACTS	☐		
ARC CHUTES	☐		
PUFFER OPERATION	☐		
OPERATING MECHANISM	☐		
CONTACT SEQUENCE	☐		
GROUND CONNECTION	☐		
AUXILIARY DEVICES	☐		

TEST VOLTAGE ______ kVDC EQUIPMENT TEMPERATURE ______ °C TEMPERATURE CORRECTION FACTOR TO 20°C, TCF ______

INSULATION RESISTANCE	POLE 1 MEGOHMS (P1-P2)		POLE 2 MEGOHMS (P2-P3)		POLE 3 MEGOHMS (P1-P3)	
	READING	20°C	READING	20°C	READING	20°C
POLE TO POLE						
POLE TO FRAME						
LINE TO FRAME						
LOAD TO FRAME						
LINE TO LOAD						

CONTACT MEASUREMENTS		POLE 1	POLE 2	POLE 3
ARCING CONTACT GAP (inches)	DESIGN			
MAIN CONTACT GAP (inches)				
ARCING CONTACT WIPE (inches)				
MAIN CONTACT WIPE (inches)				
CONTACT RESISTANCE	RDG.			
MICRO-OHMS	20°C			

CONTROL WIRING - MEGOHMS			
READING		20°C	

	POLE 1	POLE 2	POLE 3
OPENING SPEED (ft/sec)			
CLOSING SPEED (ft/sec)			

COUNTER READING: BEG. ______

END ______

COMMENTS:
DEFICIENCIES:

TEST EQUIPMENT USED: ______ TESTED BY: Default Administrator

MOLDED CASE CIRCUIT BREAKER TEST

OWNER	Example Owner			PAGE	31
PLANT	Example Plant	AMBIENT TEMP.	°F	DATE	10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY	%	JOB #	CIRCUIT BREAKERS
POSITION	GENERAL	ASSET ID			

	SETTINGS	TEST	TIME (seconds)
SHORT DELAY PICKUP:			
SHORT DELAY TIME:			
LONG TIME PHASE A:			
LONG TIME PHASE B:			
LONG TIME PHASE C:			

CONTACT RESISTANCE IN MILLIOHMS	
PHASE A:	
PHASE B:	
PHASE C:	

MEGGER TEST IN MEGAOHMS	
A - B	
B - C	
C - A	
A - G	
B - G	
C - G	
OPEN POLES	
A -	
B -	
C -	

COMMENTS:

DEFICIENCIES:

TEST EQUIPMENT USED:

TESTED BY: Default Administrator

OIL CIRCUIT BREAKER DISSIPATION TEST

OWNER	Example Owner		PAGE 32
PLANT	Example Plant	AMBIENT TEMP. °F	DATE 10/10/2014
SUBSTATION	CIRCUIT BREAKER	HUMIDITY %	JOB # CIRCUIT BREAKERS
POSITION	GENERAL	ASSET ID	

NAMEPLATE DATA

MANUFACTURER	SERIAL NO.	TYPE
MODEL NO.	DATE MANUFACTURED	VOLTAGE kV
AMPERES	TYPE OPERATING MECHANISM	TOTAL WEIGHT LBS
INTERRUPTING RATING kA @ kV	NUMBER OF TANKS	TOTAL FLUID CAP. GAL

POLE CONFIGURATION

MECH POLE 1 (1, 2) — POLE 2 (3, 4) MECH — POLE 3 (5, 6)

TANK LOSS INDEX

TANK TESTS MW - (LINE BUSHINGS MW + LOAD BUSHING MW) = TLI

TANK TESTS: (4) GST-L GROUNDED

BUSHING TESTS: (5) GST-L GUARDED

$$PF = \frac{DF}{\sqrt{1 + DF^2}}$$

EQUIPMENT TEMPERATURE °C

TEMPERATURE CORRECTION FACTOR TO 20°C, TCF

		INDIVIDUAL BUSHING TESTS - BREAKER OPEN						TANK TESTS - BKR. CLOSED		
		TEST 1	TEST 2	TEST 3	TEST 4	TEST 5	TEST 6	TANK A	TANK B	TANK C
	TEST VOLTAGE - kV									
	VOLTAGE SW. POSITION									
CAPACITANCE	CAPACITANCE - NORMAL									
CAPACITANCE	CAPACITANCE - REVERSE									
CAPACITANCE	CALCULATED AVERAGE									
CAPACITANCE	CAPACITANCE MULTIPLIER									
CAPACITANCE	TOTAL CAP. (PICO-FARADS)									
DISSIPATION FACTOR	% D.F. - NORMAL									
DISSIPATION FACTOR	% D.F. - REVERSE									
DISSIPATION FACTOR	CALCULATED AVERAGE									
DISSIPATION FACTOR	VOLTAGE MULTIPLIER									
DISSIPATION FACTOR	% D.F. - MEASURED									
DISSIPATION FACTOR	% D.F. @ 20 DEG. C.									
	CALCULATED % P. F.									
MILLIWATTS	M. W. LOSS - NORMAL									
MILLIWATTS	M. W. LOSS - REVERSE									
MILLIWATTS	CALCULATED AVERAGE									
MILLIWATTS	VOLTAGE MULTIPLIER									
MILLIWATTS	TOTAL MW LOSS									
	TANK LOSS INDEX	TANK A:	0.00	TANK B:	0.00	TANK C:	0.00			

COMMENTS:

DEFICIENCIES:

TEST EQUIPMENT USED:

TESTED BY: Default Administrator