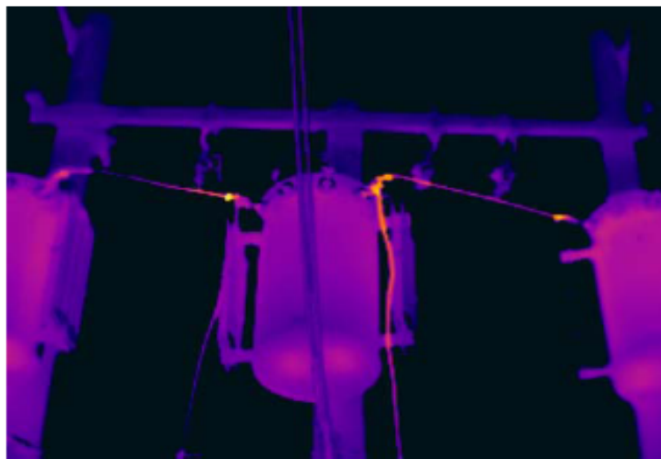


INFRARED ANALYSIS SURVEY REPORT

Sample Client

Facility A

DATA COLLECTED: December 2013



Sample Client

Facility A INFRARED RELIABILITY MATRIX

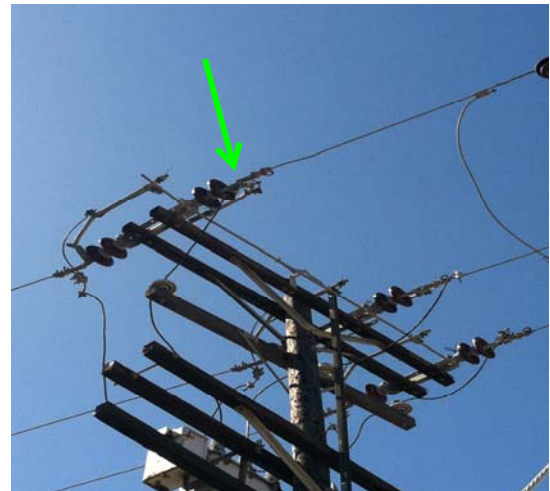
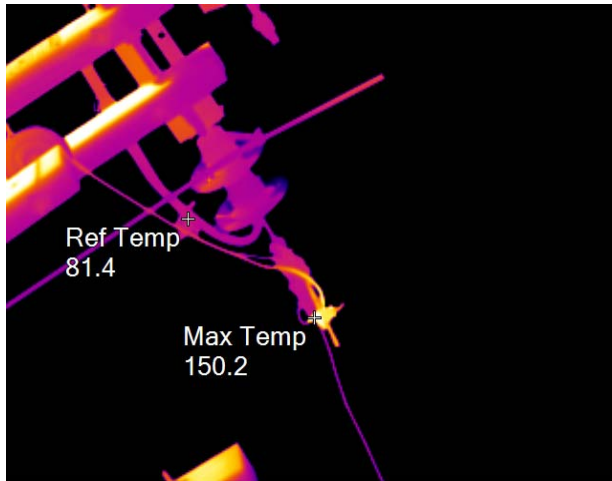
CLICKABLE
NAVIGATION



DATE	PAGE #	Unit Number	LOCATION	COMMENTS	CUSTOMER ACTION ITEMS	SEVERITY
01/05/14	3	POLE E3 (NEXT TO RECLOSURE)	EASTSIDE FIELD	LEFT SIDE LINE HAS A HOT CLAMP CONNECTION.	INSPECT AND CLEAN CONNECTION.	MODERATE
01/05/14	4	POLE E34 (ABOVE THE OLD FIELD GAS COMPRESSOR)	EASTSIDE FIELD	MIDDLE LINE "U" CLAMP CONNECTION APPEARS TO HAVE EXCESSIVE RESISTANCE AT THE MECHANICAL CONNECTION.	INSPECT AND CLEAN CONNECTION. THIS SHOULD BE ADDRESSED ASAP.	MODERATE
01/05/14	5	POLE E-57 (AT WEST PART OF T-280 CRUDE OIL TANK)	EASTSIDE FIELD	ELEVATED THERMAL PATTERN ON THE LINE SIDE B PHASE CONNECTION.	INSPECT AND CLEAN CONNECTION AND FUSES.	MINOR
01/05/14	6	POLE E34 (ABOVE THE OLD FIELD GAS COMPRESSOR)	EASTSIDE FIELD	LEFT FUSE HAS A TOP CONNECTION DEFECT.	INSPECT AND CLEAN CONNECTION AND FUSES.	MINOR
01/05/14	7	POLE 135528 (AT THE NORTH PART OF THE T-280 CRUDE OIL TANK)	EASTSIDE FIELD	LEFT FUSE HAS A BOTTOM CONNECTION DEFECT.	INSPECT AND CLEAN CONNECTION AND FUSES.	MINOR
01/05/14	8	POLE E54	EASTSIDE FIELD	LEFT SIDE LINE CLAMP CONNECTION HAS ELEVATED TEMPERATURE CONSISTENT WITH A LOOSE OR CORRODED CONNECTION.	INSPECT AND CLEAN CONNECTION. VERIFY ALL CLAMP CONNECTIONS ARE CLEAN.	MINOR
01/05/14	9	POLE E54	EASTSIDE FIELD	MIDDLE LINE CLAMP CONNECTION HAS ELEVATED TEMPERATURE CONSISTENT WITH A LOOSE OR CORRODED CONNECTION.	INSPECT AND CLEAN CONNECTION.	MINOR
01/05/14	10	POLE E54	EASTSIDE FIELD	MIDDLE LINE CLAMP CONNECTION HAS ELEVATED TEMPERATURE CONSISTENT WITH A LOOSE OR CORRODED CONNECTION.	INSPECT AND CLEAN CONNECTION.	MINOR
01/05/14	11	POLE W19	WESTSIDE FIELD	LOAD SIDE FUSES HAVE ELEVATED THERMAL PATTERN THAT MAY BE LOAD RELATED BUT WARRANT INSPECTION.	INSPECT AND CLEAN CONNECTION.	MINOR
01/05/14	12	POLE W23	WESTSIDE FIELD	CENTER TRANSFORMER HAS A THERMAL PATTERN CONSISTENT WITH A LOOSE OR CORRODED SECONDARY TAP CONNECTION.	INSPECT AND CLEAN CONNECTION.	MINOR

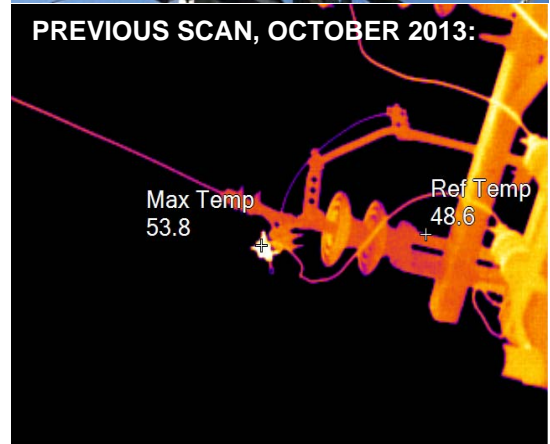
Pole E3 Next To The Reclosure

Inspection Date:	12/12/13	Location	
Equipment	Pole E3 Next to the Reclosure	Equipment Name:	Hot Line Connection
Recommended Action	Clean and tighten connection.	Potential Problem	Loose or corroded connection
Emissivity:	0.94	Repair Priority:	Moderate
Camera Manufacturer	Fluke Thermography	Inspected By:	Justin Hanscom



Comments: This left side line has a hot clamp connection defect. It has been reported on multiple times and has continued to increase in temperature.

Recommendations: Connection needs to be cleaned and inspected for any further damage.

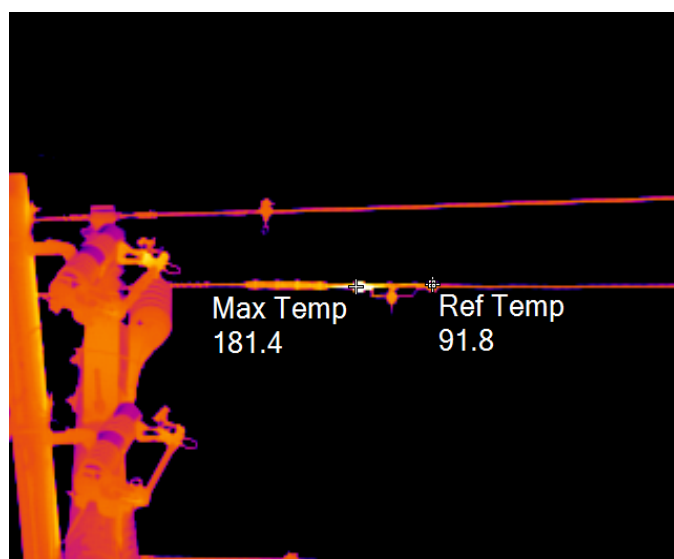


Name	Temperature
Ambient Temperature	65°F
Defect Max Temperature	150.2°F
Reference Temperature	81.4°F
Defect vs. Reference Delta Temp.	68.8°F
Defect Rise Above Ambient	85.2°F

Repaired By: _____ Date: _____

Pole E34

Inspection Date:	12/12/13	Location	
Equipment	Pole E34 (Above the Old Field Gas Compressor)	Equipment Name:	“U” Clamp Connection
Recommended Action	Inspect and clean this connection.	Potential Problem	Excessive Resistance
Emissivity:	0.94	Repair Priority:	Moderate
Camera Manufacturer	Fluke Thermography	Inspected By:	Justin Hanscom



Comments: This middle line has a “U” clamp connection that indicates a defective condition resulting in elevated thermal pattern, this appears to be a result of excessive resistance at the mechanical connection. This is a new defect.

Recommendations: Connection needs to be cleaned and inspected for any further damage. This should be addressed ASAP as delta temp indicates 90°F rise.

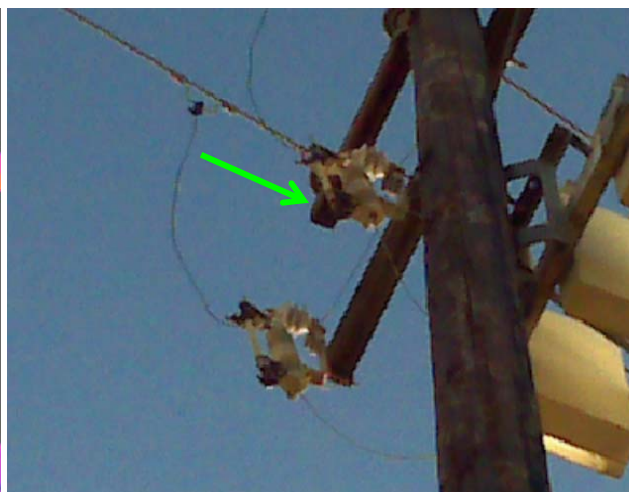
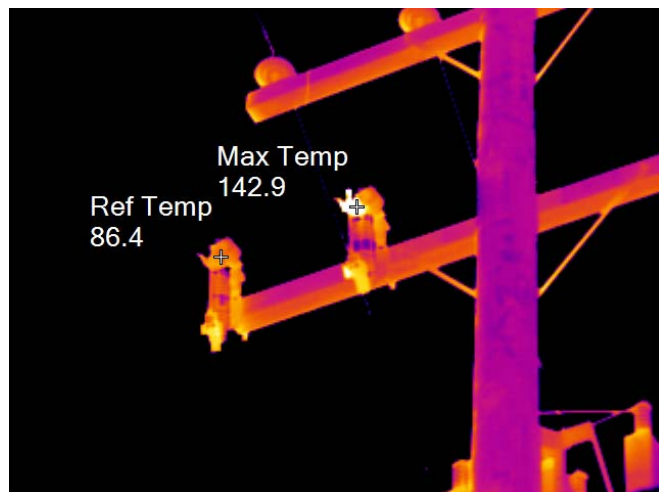


Name	Temperature
Ambient Temperature	65°F
Defect Max Temperature	181.4°F
Reference Temperature	91.8°F
Defect vs. Reference Delta Temp.	89.6°F
Defect Rise Above Ambient	116.4°F

Repaired By: _____ Date: _____

East Side Field Pole E-57

Inspection Date:	12/12/13	Location	
Equipment	Pole E-57 (At the West Part of the T-280 Crude Oil Tank)	Equipment Name:	Line Side B Phase Connection
Recommended Action	Inspect and clean connection and fuse.	Potential Problem	Loose or corroded connection.
Inspected By:	Justin Hanscom	Repair Priority:	Minor



Comments: This middle fuse has elevated thermal pattern on the line side B phase connection. It has been reported on multiple times and has continued to elevate in temperature.

Recommendations: Connection needs to be cleaned and inspected for any further damage. Also fuse should be inspected as well.

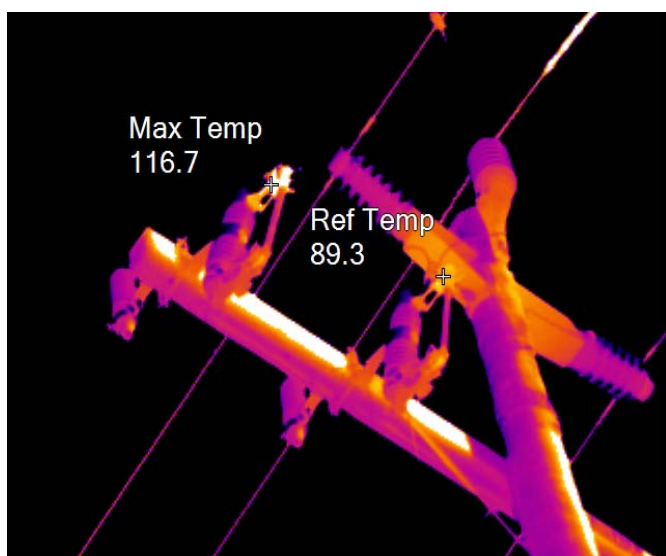


Name	Temperature
Ambient Temperature	65°F
Defect Max Temperature	142.9°F
Reference Temperature	86.4°F
Defect vs. Reference Delta Temp.	56.5°F
Defect Rise Above Ambient	77.9°F

Repaired By: _____ Date: _____

Pole E34

Inspection Date:	12/12/13	Location	
Equipment	Pole E34 (Above the Old Field Gas Compressor)	Equipment Name:	Left Fuse
Recommended Action	Inspect and clean this connection.	Potential Problem	Loose or corroded connection
Emissivity:	0.94	Repair Priority:	Minor
Camera Manufacturer	Fluke Thermography	Inspected By:	Justin Hanscom



Comments: This left fuse has a top connection defect. It has been reported on multiple times and has continued to increase in temperature.

Recommendations: Connection needs to be cleaned and inspected for any further damage. Also fuse should be inspected as well.

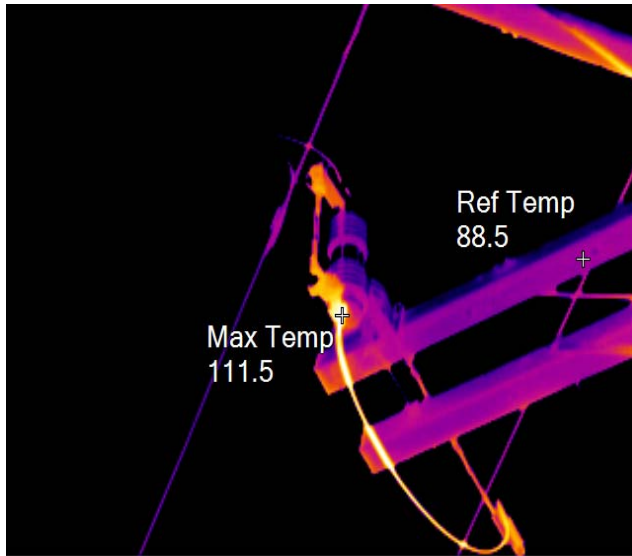


Name	Temperature
Ambient Temperature	65°F
Defect Max Temperature	116.7°F
Reference Temperature	89.3°F
Defect vs. Reference Delta Temp.	27.4°F
Defect Rise Above Ambient	51.7°F

Repaired By: _____ Date: _____

Pole 135528

Inspection Date:	12/12/13	Location	
Equipment	Pole 135528. (At the North Part of the T-280 Crude Oil Tank)	Equipment Name:	Left Fuse
Recommended Action	Clean and tighten connection.	Potential Problem	Loose or corroded connection
Emissivity:	0.94	Repair Priority:	Minor
Camera Manufacturer	Fluke Thermography	Inspected By:	Justin Hanscom



Comments: This left fuse has a bottom connection defect. It has been reported on multiple times and has continued to elevate in temperature.

Recommendations: Connection needs to be cleaned and inspected for any further damage. Also inspect fuse.

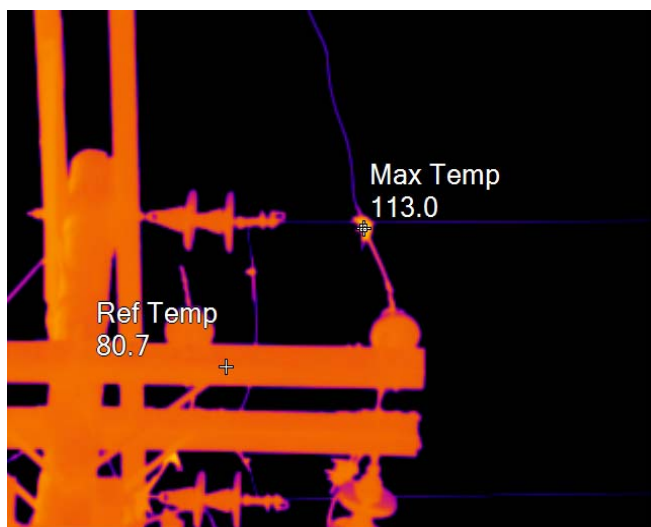


Name	Temperature
Ambient Temperature	65°F
Defect Max Temperature	111.5°F
Reference Temperature	88.5°F
Defect vs. Reference Delta Temp.	23°F
Defect Rise Above Ambient	46.5°F

Repaired By: _____ Date: _____

East Side Field Pole E-54

Inspection Date:	12/12/13	Location	
Equipment	Pole E-54	Equipment Name:	Left line clamp connection
Recommended Action	Inspect and clean connection.	Potential Problem	Loose or corroded connection
Emissivity:	0.94	Repair Priority:	Minor
Camera Manufacturer	Fluke Thermography	Inspected By:	Justin Hanscom



Comments: This left side line has a thermal pattern on the clamp connection consistent with excessive resistance due to a loose or corroded connection.

Recommendations: Connection needs to be cleaned and inspected for any further damage. Verify all clamp connections are clean.



Name	Temperature
Ambient Temperature	65°F
Defect Max Temperature	113°F
Reference Temperature	80.7°F
Defect vs. Reference Delta Temp.	32.3°F
Defect Rise Above Ambient	48°F

Repaired By: _____ Date: _____

East Side Field Pole E-54

Inspection Date:	12/12/13	Location	
Equipment	Pole E-54	Equipment Name:	Middle line clamp connection
Recommended Action	Inspect and clean connection.	Potential Problem	Loose or corroded connection
Emissivity:	0.94	Repair Priority:	Minor
Camera Manufacturer	Fluke Thermography	Inspected By:	Justin Hanscom



Comments: This middle line has a thermal pattern on the clamp connection consistent with excessive resistance. Typically this is a result of a loose or corroded clamp connection.

Recommendations: Connection needs to be cleaned and inspected for any further damage.

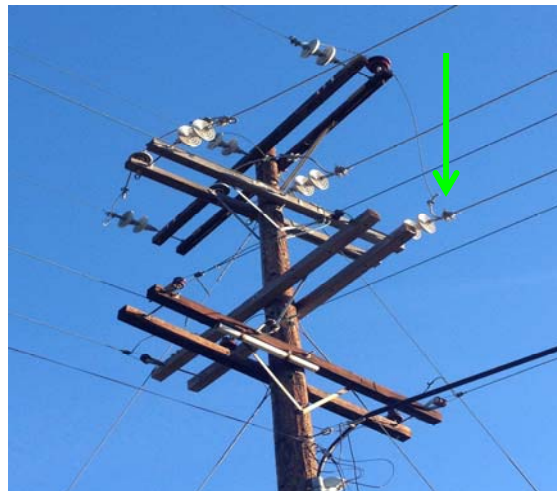
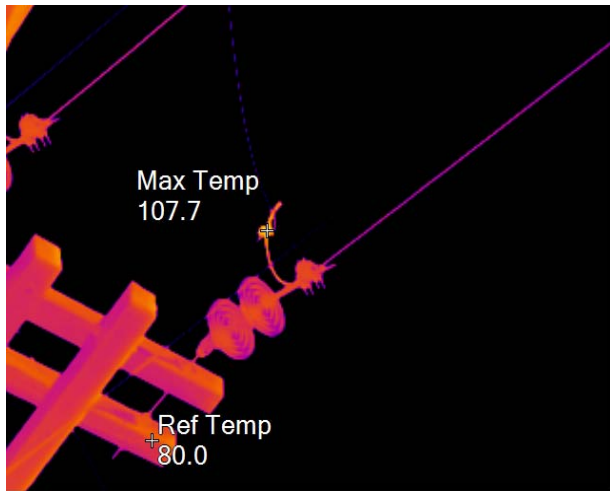


Name	Temperature
Ambient Temperature	65°F
Defect Max Temperature	108.6°F
Reference Temperature	80.6°F
Defect vs. Reference Delta Temp.	28°F
Defect Rise Above Ambient	43.6°F

Repaired By: _____ Date: _____

East Side Field Pole E-54

Inspection Date:	12/12/13	Location	
Equipment	Pole E-54	Equipment Name:	Middle line clamp connection
Recommended Action	Inspect and clean connection.	Potential Problem	Loose or corroded connection
Emissivity:	0.94	Repair Priority:	Minor
Camera Manufacturer	Fluke Thermography	Inspected By:	Justin Hanscom



Comments: This middle line has a hot clamp connection defect.

Recommendations: Connection needs to be cleaned and inspected for any further damage.

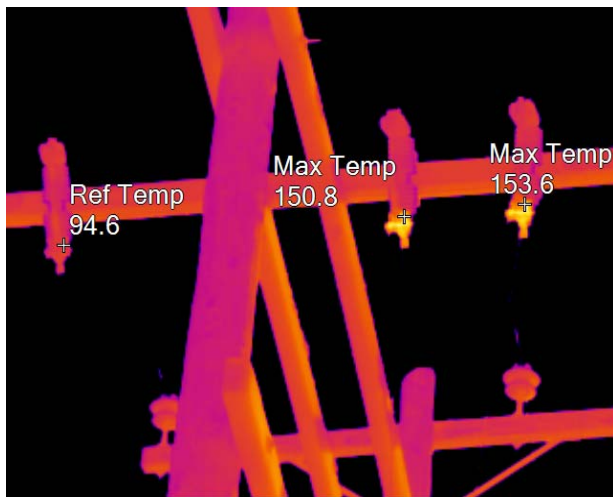


Name	Temperature
Ambient Temperature	65°F
Defect Max Temperature	107.7°F
Reference Temperature	80°F
Defect vs. Reference Delta Temp.	27.7°F
Defect Rise Above Ambient	42.7°F

Repaired By: _____ Date: _____

Pole W-19

Inspection Date:	12/26/13	Location	
Equipment	Pole W-19	Equipment Name:	Load side fuses
Recommended Action	Inspect and clean connections. Ensure proper load.	Potential Problem	Elevated thermal pattern may be load related but warrants monitoring.
Emissivity:	0.94	Repair Priority:	Minor
Camera Manufacturer	Fluke Thermography	Inspected By:	Justin Hanscom



Comments: Load side fuses have elevated thermal pattern that may be load related but warrant inspection. It has been reported on and has continued to increase in temperature.

Recommendations: Connections need to be cleaned and inspected for any further damage. Also inspect fuse.

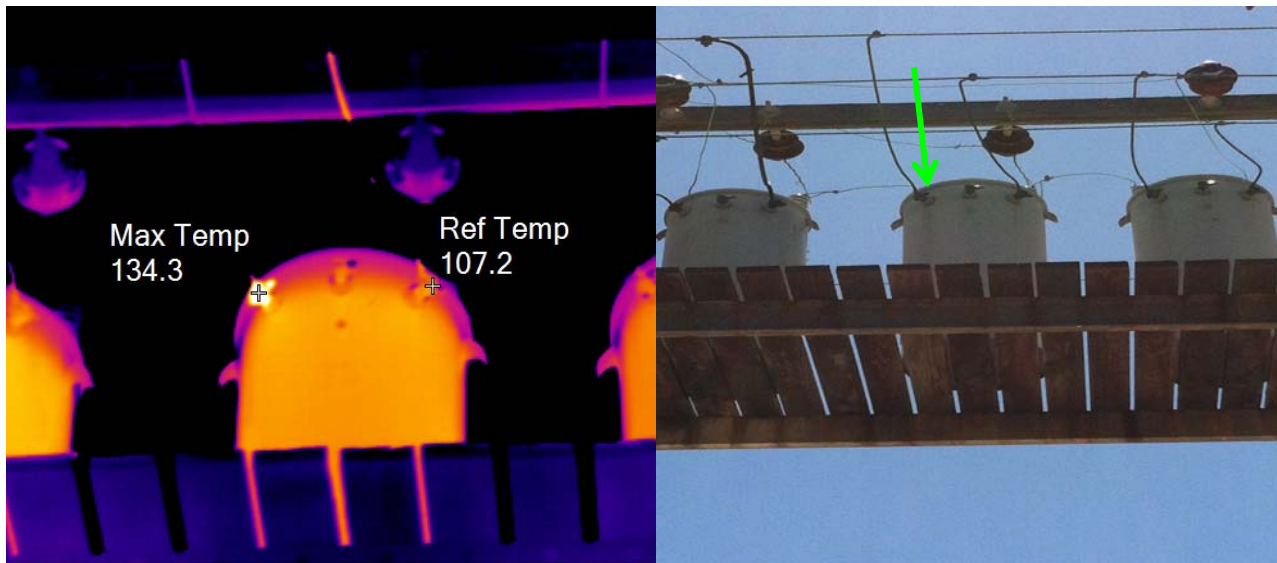


Name	Temperature
Ambient Temperature	65°F
Defect Max Temperature	153.6°F
Reference Temperature	94.6°F
Defect vs. Reference Delta Temp.	59°F
Defect Rise Above Ambient	88.6°F

Repaired By: _____ Date: _____

Pole W-23

Inspection Date:	12/26/13	Location	
Equipment	Pole W-23	Equipment Name:	Middle transformer, Secondary tap connection
Recommended Action	Inspect and clean connection.	Potential Problem	Loose or corroded connection.
Emissivity:	0.94	Repair Priority:	Minor
Camera Manufacturer	Fluke Thermography	Inspected By:	Justin Hanscom



Comments: This center transformer has a thermal pattern consistent with a loose or corroded secondary tap connection.

Recommendations: Connection needs to be cleaned and inspected for any further damage.



Name	Temperature
Ambient Temperature	65°F
Defect Max Temperature	134.3°F
Reference Temperature	107.2°F
Defect vs. Reference Delta Temp.	27.1°F
Defect Rise Above Ambient	69.3°F

Repaired By: _____ Date: _____