



SAMPLE REPORT

A Qualitative Infrared Thermo Graphic Survey Of Electrical System Components

The Electrical Switchgear of the Water Plant, was the subject of an infrared (IR) survey on 11-3-2014, Equipment designated by the client for this survey is listed on this report.

National Circuit Breaker– ElectricIR report includes:

- **Section A** – Data Log, a list of all equipment surveyed
- **Section B** – Repair Guide, a list of all equipment with thermal anomalies
- **Section C** – Thermo graphic Report, individual report pages of all equipment with Thermal anomalies

National Circuit Breaker, was retained for an electrical thermo graphic of the building in an effort to identify areas of thermal anomalies and to document them for further review and repair. Further investigations of these areas may reveal additional conditional conditions that were not readily visible at the time of inspection. This report is based on information obtained at the site at the given date and time. We document our findings with infrared thermo grams and visual photographs of the area. Our inspection is designed to comply with accepted industrial standards and this report is for the exclusive use of our client and is not intended for any other purpose. The report is based on the information available to us at this time as described in the report. Should an additional information become available at a later date, we reserve the right to determine the impact, if any, that the new information may have on our discovery and recommendations and to revise the report if necessary and warranty.

Analysis and Recommendations

We recommend that your maintenance team carefully review this report. Items listed on the repair Guide should be checked by qualified personnel. We use the Delta – T method of rating equipment. Below see the temperature ratings, however, your criteria for rating a problem will include not only temperature, but criticality of the equipment and other factors.



Rating	Temperature Rise F °	Recommendation
Minor	1-15 ° F	Routine, Repair during regular maintenance
Alert	16-50 ° F	Repair within 30 days, watch load and inspect for physical Dam.
Serious	51-100 ° F	Repair / Replace ASAP, inspect surrounding components
Critical	100+ ° F	Immediate repair / replace. Dangers exists!

Our reports are designed to be clear, concise and useful. Please review this report carefully. If there is anything you would like us to explain, or if there is other information you would like, please feel free to call us we would be happy to answer any questions.

GLOBAL REPORT INFORMATION

Client:	
Building Name:	Water Building
Building Location:	
Facility Qualified Assistance:	
Survey Date:	10-28-2014 to 11-14-2014
Ambient Temperature:	@ 80F
Imager used:	Ti-400 Fluke
Notes:	

REPORT FINDINGS - TOTALS and SUMMARY

OK	534
1= Minor = Routine Repair	5
2= Alert – Repair 30 Days	4
3= Serious- Repair ASAP	5
4= Critical- Danger Immediate Repair.	8
TOTAL =	

Understanding Infrared Imagery

Infrared imagery is often a grayscale picture or thermograph whose scale (or shades of gray) represent the differences in emitted energy from the surface often referred to as temperature. As a general rule, patterns in the image that are lighter in shade are warmer and darker patterns cooler. Unlike visible imagery that capture visible light in the 0.4-.07 micrometer wavelengths, objects observed using an infrared imagery capture infrared wavelengths in the 3-5 or 8-14 micrometer range.



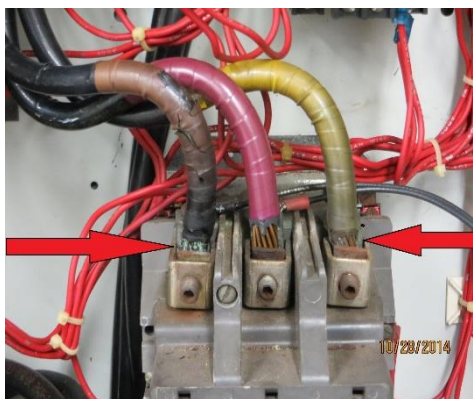
National Circuit Breaker
13039 Florence Ave., Santa Fe Springs, CA 90670
1-800-945-0065
Website: Nationalcircuitbreaker.com
Email: Sales@nationalcircuitbreaker.com

Visible lights that produce heat and other relatively hot object are very evident, but as a result of their heat or infrared emission and not due to the visible light emission.

When an image is taken with an infrared camera, it is often recorded onto videotape and/or digitally saved to an on-board storage device. The image may be then modified in a number of ways to enhance its value to the end user. Image files are digitized, saved, then adjusted for color, contrast and brightness before being scaled and placed into a report file. The report is then printed in a high quality paper.

We scan the building with sensitive infrared cameras to detect the patterns and record them for later analysis. Once a pattern is detected the infrared images can be save for documentation in the report.

REPORT #2 (IR#2) West Well #18

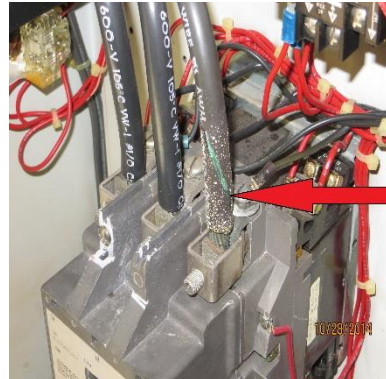
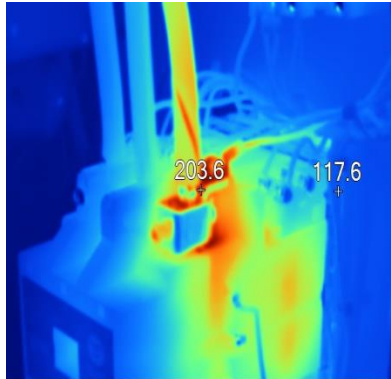


- **CLIENT:**
- **LOCATION :** West Well Field Pumps
- **AREA 1 :** West well Pump #18
- **EQUIPMENT NAME :** 300- Line Contactor Nima size 4 Contactor

File Location	
Image Time	10/28/2014 12:25:48 PM
Emissivity	0.96
Background Temp	71.6 °F
Transmission	100%
Image Range	92.3 °F to 237.3 °F
Average Temp	121.0 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 482.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This Nema size 4 is showing an Infrared heat due to burned connection and a burned cable on A & C phase. We recommend replacing the Nema size 4 contactor and all the cable associated with the contactor. This must be done by a qualify personal. Please see the NOTES for more documentation.

REPORT #3 (IR#3) WEST WELL PUMP#19

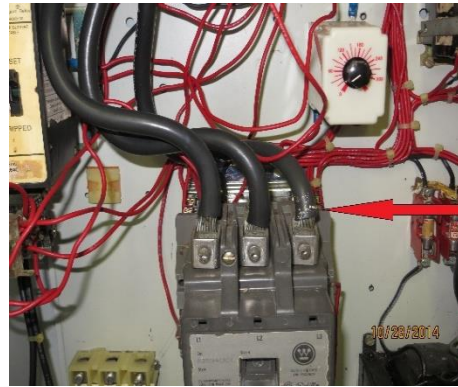


- **CLIENT:**
- **LOCATION :** West Well Field Pumps
- **AREA 1 :** West well Pump #19
- **EQUIPMENT NAME :** 300- Line Contactor Nima size 4 Contactor

File Location	
Image Time	10/28/2014 1:05:28 PM
Emissivity	0.96
Background Temp	71.6 °F
Transmission	100%
Image Range	95.3 °F to 213.0 °F
Average Temp	128.0 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 482.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This Nema size 4 is showing an Infrared heat due to burned connection and a burned cable on C phase. We recommend replacing the Nema size 4 contactor and all the cable associated with the contactor. This must be done by a qualify personal. Please see the NOTES for more documentation.

REPORT #4 (IR#4) WEST WELLPUMP#22



- **CLIENT:**
- **LOCATION :** West Well Field Pumps
- **AREA 1 :** West well Pump #22
- **EQUIPMENT NAME :** 300- Line Contactor Nima size 4

File Location	
Image Time	
Emissivity	0.96
Background Temp	72.6 °F
Transmission	100%
Image Range	91.1 °F to 213.0 °F
Average Temp	128.0 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 482.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.57.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This Nema size 4 is showing an Infrared heat due to burned connection and a burned cable on C phase. We recommend repair the Nema size 4 contactor and all the cable associated with the contactor. This must be done by a qualify personal. Please see the NOTES for more documentation.

REPORT #5 (IR#5) WEST WELL PUMP#22 Lighting Panel

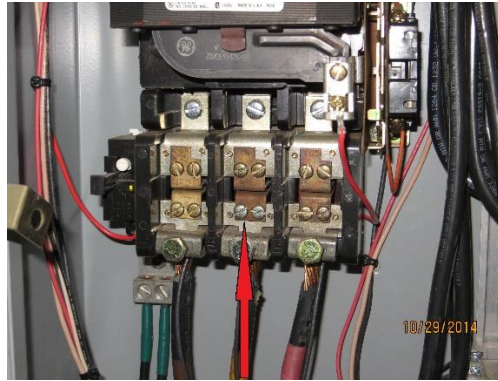
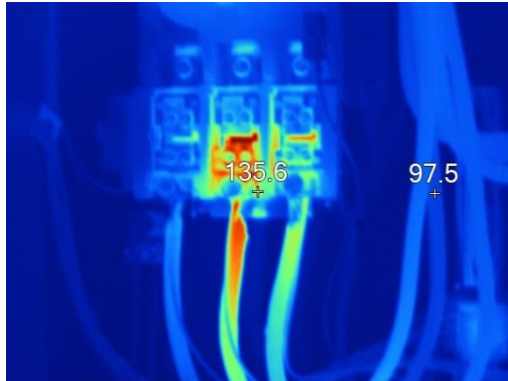


- CLIENT:
- LOCATION : West Well Field Pumps
- AREA 1 : West well Pump #22
- EQUIPMENT NAME : LIGHTING PANEL NEUTRAL CONNECTION

File Location	
Image Time	
Emissivity	0.96
Background Temp	71.6 °F
Transmission	100%
Image Range	85.9 °F to 161.5 °F
Average Temp	91.0 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This panel is showing an Infrared heat due to a loose connection in the Neutral terminal, there are two cables in one terminal it should be one cable per terminal, neutral cable must be re-cut and strip before installing. This must be done by a qualify personal. Please see the NOTES for more documentation.

REPORT #6 (**IR#6**) **EAST WELL PUMP #14**



- **CLIENT:**
- **LOCATION :** East Well Field Pumps
- **AREA 1 :** East well Pump #14
- **EQUIPMENT NAME :** Contactor Nima size 4

File Location	
Image Time	10/29/2014 1:21:05 PM
Emissivity	0.96
Background Temp	71.6 °F
Transmission	100%
Image Range	84.7 °F to 164.3 °F
Average Temp	94.8 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 482.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This Nema size 4 is showing an Infrared heat due to having the wrong heater unit. We recommend replacing the heater for the right one. This must be done by a qualify personal. Please see the **NOTES** for more documentation.

Page 8

REPORT #7 (**IR#7**) RE-USE TREATMENT PLANT COMPRESSOR ROOM



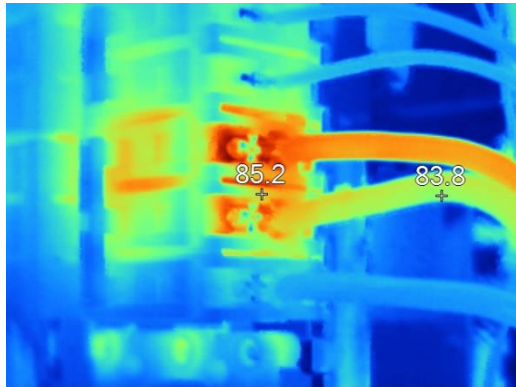
- **CLIENT:**
- **LOCATION :** Re-Use Treatment Plant
- **AREA 1 :** Air Compressor Room
- **EQUIPMENT NAME :** 200 Amp Fuse Disconnect

File Location	
Image Time	10/31/2014 8:15:51 AM
Emissivity	0.96
Background Temp	71.6 °F
Transmission	100%
Image Range	79.0 °F to 132.1 °F
Average Temp	86.7 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This 200 amp fuse disconnect is showing an Infrared heat due to a bad contact at the C phase main contact point. We recommend the main contactors should be clean with scosh brite mobil lub and check continuity. This must be done by a qualify personal. Please see the NOTES for more documentation.

Page 9

REPORT #8 (IR#8) HIGH SERVICE PUMP BLDG.



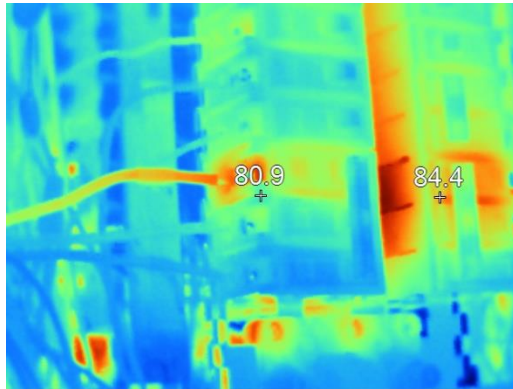
- **CLIENT:**
- **LOCATION :** HIGH SERVICE PUMP / EMERGENCY GENERATOR BUILDING
- **AREA 1 ::** PANEL PNL2
- **EQUIPMENT NAME :** PANEL PNL2 / 100 AMP MAIN BREAKER

File Location	
Image Time	11/4/2014 10:44:36 AM
Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	76.5 °F to 90.2 °F
Average Temp	81.3 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This 100 amp Main breaker is showing an Infrared heat due to an Unbalance Load. We recommend balancing all the phases evenly mater. This must be done by a qualify personal. Please see the NOTES for more documentation.

Page 10

REPORT #9 (IR#9) HIGH SERVICE PUMP BLDG.



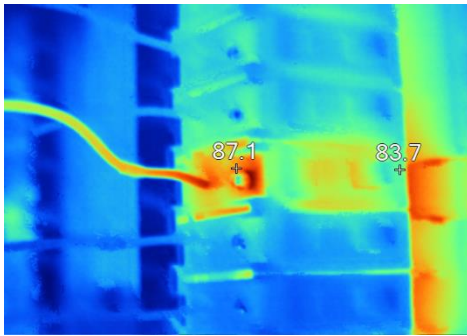
- **CLIENT:**
- **LOCATION :** HIGH SERVICE PUMP / EMERGENCY GENERATOR BUILDING
- **AREA 1 ::** PANEL PNL2
- **EQUIPMENT NAME :** PANEL PNL2 / 50 amp Main breaker for panel PNL1 ID# 29

File Location	
Image Time	11/4/2014 10:45:12 AM
Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	75.3 °F to 88.5 °F
Average Temp	81.0 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This 50 amp Main breaker is showing an Infrared heat due to an Unbalance Load. We recommend balancing all the phases evenly mater. This must be done by a qualify personal. Please see the NOTES for more documentation.

Page 11

REPORT #10 (IR#10) HIGH SERVICE PUMP BLDG.



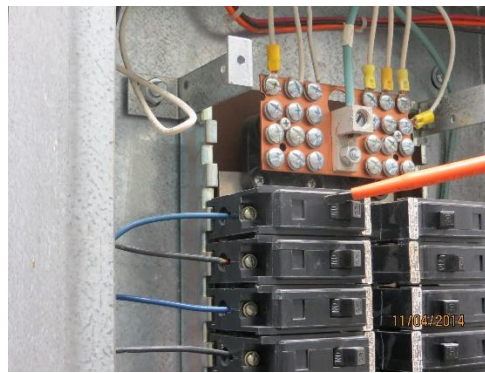
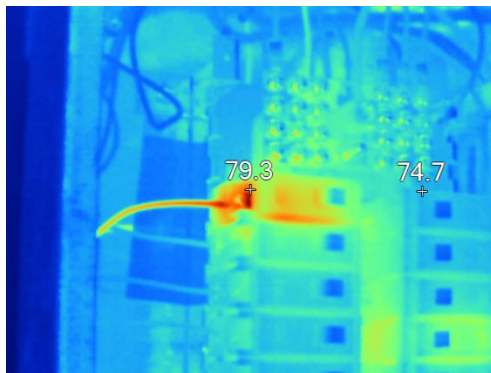
- **CLIENT:**
- **LOCATION :** HIGH SERVICE PUMP / EMERGENCY GENERATOR BUILDING
- **AREA 1 ::** PANEL PNL2
- **EQUIPMENT NAME :** PANEL PNL2 / 20 amp single phase brk. ID#9

File Location	
Image Time	11/4/2014 10:46:25 AM
Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	77.9 °F to 90.3 °F
Average Temp	82.2 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This 20 amp breaker is showing an Infrared heat due to a difective breaker. We recommend replasing the breaker. This must be done by a qualify personal. Please see the NOTES for more documentation.

Page 12

REPORT #11 (IR#11) HIGH SERVICE PUMP BLDG.



- **CLIENT:**
- **LOCATION :** HIGH SERVICE PUMP / EMERGENCY GENERATOR BUILDING
- **AREA 1 ::** PANEL PNL1
- **EQUIPMENT NAME :** PANEL PNL1 / 20 amp single phase brk. ID#1

File Location	
á	11/4/2014 11:24:18 AM
Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	71.2 °F to 81.5 °F
Average Temp	74.5 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This 20 amp breaker is showing an Infrared heat due to a difective breaker. We recommend replasing the



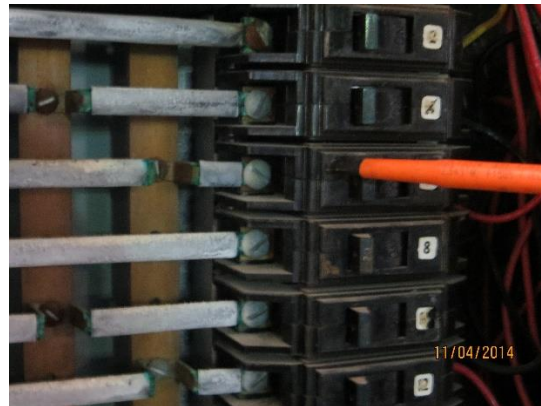
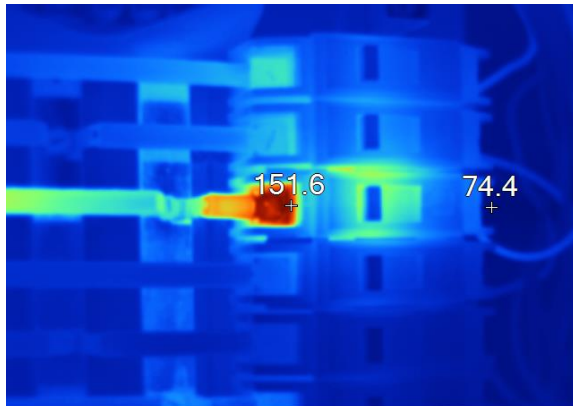
National Circuit Breaker
13039 Florence Ave., Santa Fe Springs, CA 90670
1-800-945-0065

Website: Nationalcircuitbreaker.com
Email: Sales@nationalcircuitbreaker.com

breaker. This must be done by a qualify personal. Please see the NOTES for more documentation.

Page 13

REPORT #13 (IR#13) FILTER



- CLIENT:
- LOCATION : FILTER BUILDING
- AREA 1 : PANEL B
- EQUIPMENT NAME : Panel B circuit ID#6

File Location	
Image Time	
Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	74.0 °F to 159.8 °F
Average Temp	87.0 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0



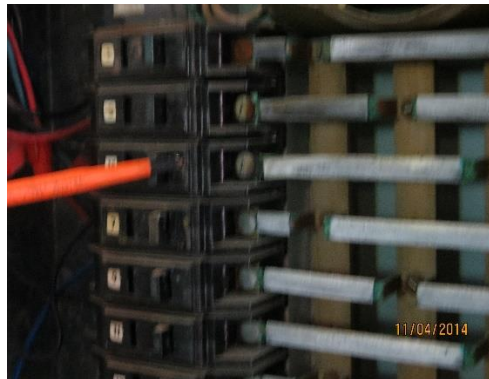
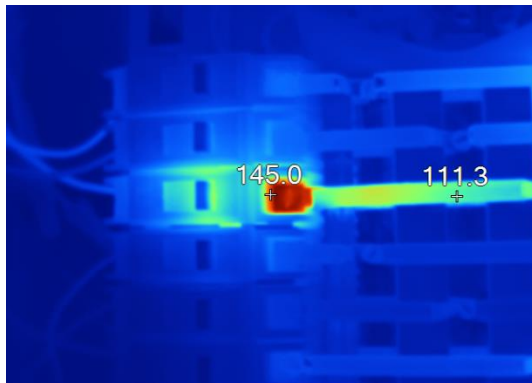
National Circuit Breaker
13039 Florence Ave., Santa Fe Springs, CA 90670
1-800-945-0065

Website: Nationalcircuitbreaker.com
Email: Sales@nationalcircuitbreaker.com

DESCRIPTION & RECOMMENDATION (Please also review charge below): This 20 amp single phase brk. is showing an Infrared heat due to a loose or poor connection at the line bus and breaker is difective . We recommend checking connection integrity with repairs as may be necessary and replace breaker. This must be done by a qualify personal. Please see the NOTES for more documentation.

Page 14

REPORT #14 (IR#14) FILTER BUILDING



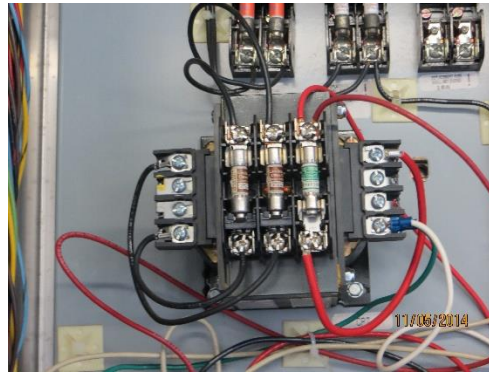
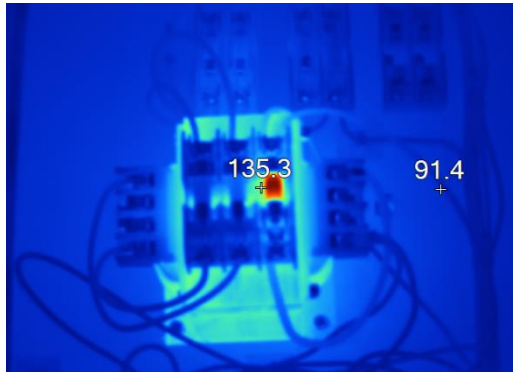
- CLIENT:
- LOCATION : FILTER BUILDING
- AREA 1 : PANEL B
- EQUIPMENT NAME : Panel B circuit ID#5

File Location	
Image Time	11/4/2014 3:19:36 PM
Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	75.6 °F to 156.7 °F
Average Temp	85.2 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This 20 amp single phase brk. is showing an Infrared heat due to a loose or poor connection at the line bus and breaker is difective . We recommend checking connection integrity with repairs as may be necessary and replace breaker. This must be done by a qualify personal. Please see the NOTES for more documentation.

Page 15

REPORT #15 (IR#15) OLD CONTROL BUILDING



- CLIENT:
- LOCATION : OLD CONTROL BUILDING
- AREA 1 : 2nd Floor
- EQUIPMENT NAME : H.S. Pump 1 (300 - Line Control)

File Location	
Image Time	11/4/2014 3:32:41 PM
Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	79.5 °F to 192.0 °F
Average Temp	95.1 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 482.0 °F



National Circuit Breaker
13039 Florence Ave., Santa Fe Springs, CA 90670
1-800-945-0065

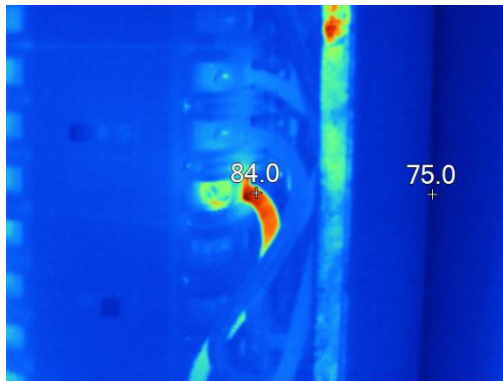
Website: Nationalcircuitbreaker.com
Email: Sales@nationalcircuitbreaker.com

Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This CPT is showing an Infrared heat due to having the wrong size fuse . We recommend installing the right size of fuse. This must be done by a qualify personal. Please see the NOTES for more documentation.

Page 16

REPORT #17 (IR#17) OLD CONTROL BUILDING



- CLIENT:
- LOCATION : OLD CONTROL BUILDING
- AREA 1 : PANEL 12PP1
- EQUIPMENT NAME : Circuit breaker ID#14 (3 phase 70 Amps)

File Location	
Image Time	11/5/2014 10:36:06 AM
Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	74.8 °F to 85.9 °F
Average Temp	76.6 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198



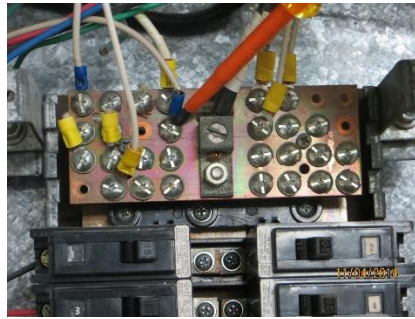
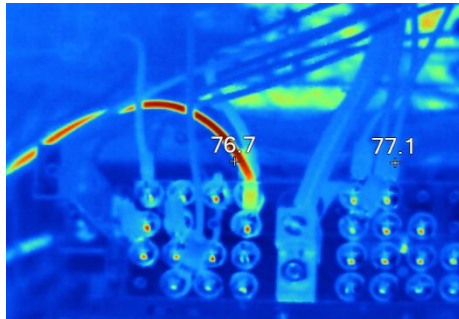
SOC Version

2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This 3 phase 70 Amp breaker is showing an Infrared heat due to a loose connection . We recommend checking connection integrity with repairs as may be necessary. This must be done by a qualify personal. Please see the NOTES for more documentation.

Page 17

REPORT #16 (IR#16) OLD CONTROL BUILDING



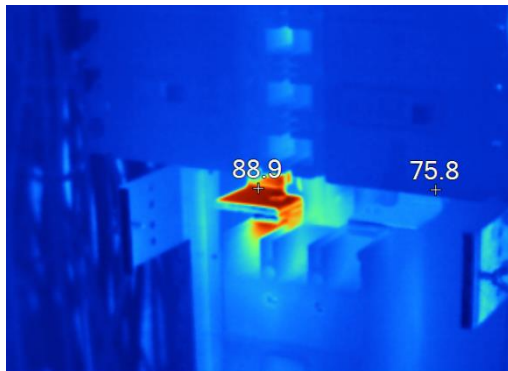
- **CLIENT:**
- **LOCATION :** OLD CONTROL BUILDING
- **AREA 1 :** Panel 12LL10
- **EQUIPMENT NAME :** Breaker ID#23 Neutral wire

File Location	
Image Time	11/5/2014 10:36:06 AM
Emissivity	1.00
Background Temp	74.6 °F
Transmission	100%
Image Range	71.8 °F to 89.9 °F
Average Temp	76.6 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 188.0 °F
Camera serial number	Ti300-14100198

DESCRIPTION & RECOMMENDATION (Please also review charge below): **This neutral wire is showing an Infrared heat due to a loose connection . We recommend checking connection integrity with repairs as may be necessary. This must be done by a qualify personal. Please see the NOTES for more documentation.**

Page 18

REPORT #18 (IR#18) OLD CONTROL BUILDING



- **CLIENT:**
- **LOCATION :** OLD CONTROL BUILDING
- **AREA 1 :** PANEL 12PP1
- **EQUIPMENT NAME :** Main Breaker 225 Amps

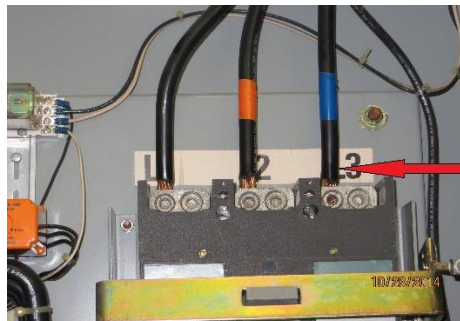
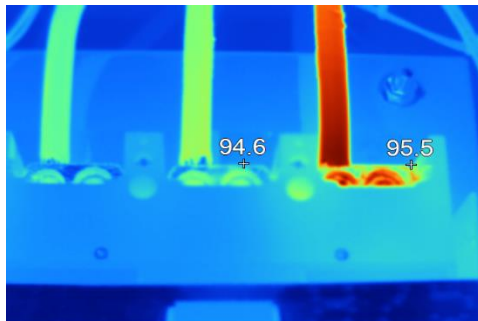
File Location	
Image Time	11/5/2014 10:36:33 AM
Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	73.9 °F to 90.0 °F
Average Temp	76.5 °F
Severity	
Camera model	Ti300

IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): **This 3 phase 225 Amp Main breaker is showing an Infrared heat due to a loose connection on top of A phase. We recommend checking connection integrity with repairs as may be necessary. This must be done by a qualify personal. Please see the NOTES for more documentation.**

Page 19

REPORT #1 (IR#1) EAST WELL PUMP #4



- **CLIENT:**
- **LOCATION :** East Well Field Pumps
- **AREA 1 :** East well Pump #4
- **EQUIPMENT NAME :** 300- Line Contactor Main Breaker

File Location	
Image Time	10/28/2014 10:33:04 AM
Emissivity	0.96
Background Temp	71.6 °F
Transmission	100%
Image Range	83.9 °F to 119.8 °F
Average Temp	94.2 °F
Severity	
Camera model	Ti300



National Circuit Breaker
13039 Florence Ave., Santa Fe Springs, CA 90670
1-800-945-0065

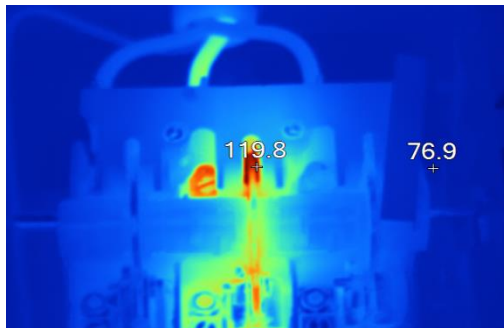
Website: Nationalcircuitbreaker.com
Email: Sales@nationalcircuitbreaker.com

IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): **This Main breaker is showing an Infrared heat due to an Unbalance load. We recommend that the load be distribute equally. This must be done by a qualify personal. Please see the NOTES for more documentation.**

Page 20

REPORT #12 (IR#12) FILTER BUILDING



- **CLIENT:**
- **LOCATION :** FILTER BUILDING
- **AREA 1 :** First Floor
- **EQUIPMENT NAME :** Disconnect for transformer T1

File Location	
Image Time	11/4/2014 2:07:49 PM
Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	73.5 °F to 121.9 °F
Average Temp	81.9 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180



National Circuit Breaker
13039 Florence Ave., Santa Fe Springs, CA 90670
1-800-945-0065

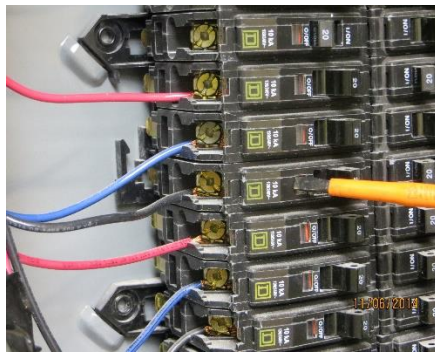
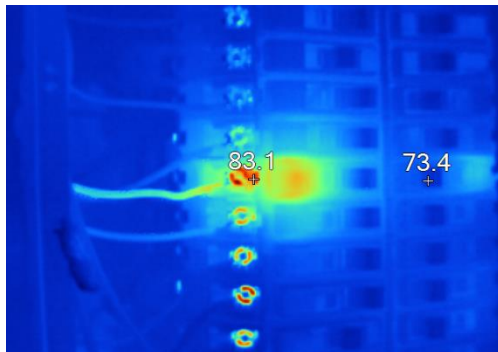
Website: Nationalcircuitbreaker.com
Email: Sales@nationalcircuitbreaker.com

Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This 100 amp 600 volt Square D. Safety Switch is showing an infrared heat due to a bad main contact resistance at B phase. We recommend checking connection integrity with repairs as may be necessary. This must be done by a qualify personal. Please see the NOTES for more documentation.

Page 21

REPORT #19 (IR#19) OLD CONTROL BLDG.



- **CLIENT:** THE CITY OF POMPANO BEACH
- **LOCATION :** OLD CONTROL BUILDING
- **AREA 1 :** 2ND FLOOR OFFICE PANEL
- **EQUIPMENT NAME :** OFFICE PANEL ID#13

File Location	
Image Time	11/6/2014 11:28:25 AM
Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	71.6 °F to 86.0 °F



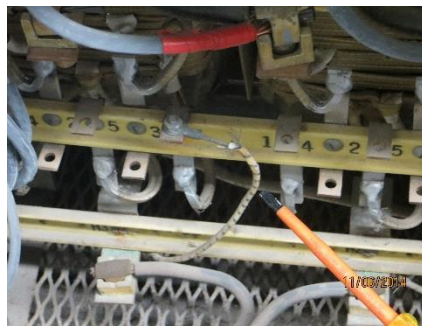
National Circuit Breaker
13039 Florence Ave., Santa Fe Springs, CA 90670
1-800-945-0065
Website: Nationalcircuitbreaker.com
Email: Sales@nationalcircuitbreaker.com

Average Temp	74.0 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): **This 20 amp single phase breaker is showing an Infrared heat due to a defective breaker. We recommend replasing the breaker. This must be done by a qualify personal. Please see the NOTES for more documentation.**

Page 22

REPORT #20 (**IR#20**) OLD CONTROL BLDG.



- CLIENT:
- LOCATION : OLD CONTROL BUILDING
- AREA 1 : 2ND FLOOR
- EQUIPMENT NAME : **TRANSFORMER T14PP1**

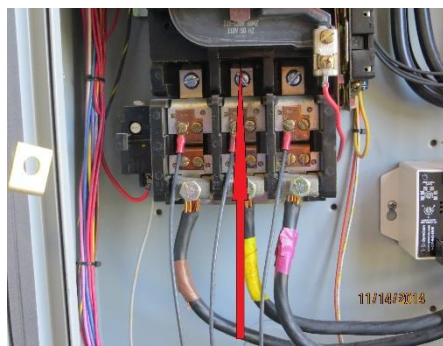
File Location	
Image Time	11/6/2014 12:02:47 PM
Emissivity	1.00
Background Temp	71.6 °F

Transmission	100%
Image Range	80.6 °F to 196.8 °F
Average Temp	106.7 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 482.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): **This 45 kva dry type xfmr. Is showing an Infrared heat due to a loose and burned tap connection. We recommend a turn to turn ratio a megger and Polarisation Index test to determ if wing is any good. This must be done by a qualify personal. Please see the NOTES for more documentation.**

Page 23

REPORT #21 (IR#21) EAST WELL PUMP #7



- **CLIENT:**
- **LOCATION :** EAST WELL PUMP #7
- **AREA 1 :** EAST WELLS
- **EQUIPMENT NAME :** G.E 300-Line Contactor "B" phase

File Location

Image Time

11/14/2014 12:12:43 PM



National Circuit Breaker
13039 Florence Ave., Santa Fe Springs, CA 90670
1-800-945-0065

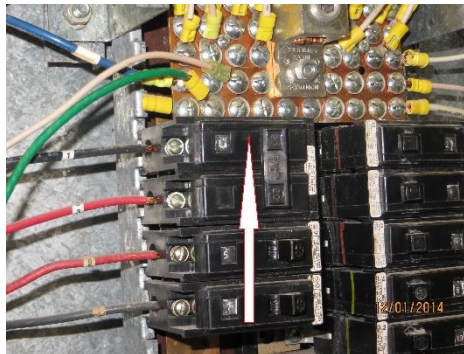
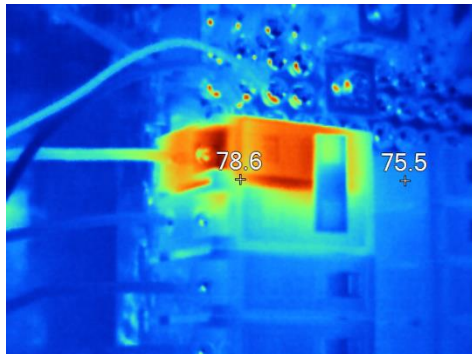
Website: Nationalcircuitbreaker.com
Email: Sales@nationalcircuitbreaker.com

Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	73.8 °F to 184.4 °F
Average Temp	90.8 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 482.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This Nema size 4 is showing an Infrared heat on "B" phase due to a loose connection or possible bad continuity on the contact surface. We recommend checking connection integrity with repairs as may be necessary. This must be done by a qualified person. Please see the NOTES for more documentation.

Page 24

REPORT #22 (IR#22) LIME BUILDING



- **CLIENT:**
- **LOCATION :** LIME BUILDING
- **AREA 1 :** PANEL 90LL2
- **EQUIPMENT NAME :** Two Pole 20 amps Circuit ID#1-3



National Circuit Breaker
13039 Florence Ave., Santa Fe Springs, CA 90670
1-800-945-0065
Website: Nationalcircuitbreaker.com
Email: Sales@nationalcircuitbreaker.com

File Location	
Image Time	12/2/2014 10:47:41 AM
Emissivity	1.00
Background Temp	71.6 °F
Transmission	100%
Image Range	73.0 °F to 81.9 °F
Average Temp	75.2 °F
Severity	
Camera model	Ti300
IR Sensor Size	240 x 180
Camera Manufacturer	Fluke Thermography
Calibration Range	-4.0 °F to 176.0 °F
Camera serial number	Ti300-14100198
SOC Version	2.47.0

DESCRIPTION & RECOMMENDATION (Please also review charge below): This 20 amp 2 pole breaker is showing an Infrared heat due to a defective breaker. We recommend replasing the breaker. This must be done by a qualify personal. Please see the NOTES for more documentation.