

Electrical Thermography Report

Prepared For:
Inspection Client

Inspected Items:
Customer Designated Electrical Equipment
Street Address
Anytown, USA

Prepared By:

**ALPINE BUILDING
INSPECTION INC.**
303-642-2300
www.alpineinspection.com

Inspection Date: Tuesday, March 22, 2010
Camera Model: FLIR EX 320
Report ID: R100322A

Thanks for choosing Alpine Building Inspection for your electrical thermography needs. We appreciate your business and take it seriously when you place your trust in us. We use the latest in infrared cameras and techniques to give our customers the most accurate inspection possible. Since the condition of buildings and equipment changes over time, we can only report the conditions that existed at the time of our inspection. We recommend that you have mission critical equipment re-inspected on an annual basis and that you keep previous inspection reports to help with establishing baseline conditions for any items in question. The conditions and recommended actions reported herein are merely the opinion of the thermographer and any item with an action level should be investigated and repaired by a qualified licensed electrician. This report does not claim to set forth all existing hazards or to indicate that other hazards do not exist. The inspection and report are performed and prepared for the use of the client named on the cover. Alpine Building Inspection Inc. accepts no responsibility for use or misinterpretation by third parties. Our inspection of the property and the accompanying report are in no way intended to be a guarantee or warranty of any kind. Any and all warranties, express or implied, regarding this inspection and report are expressly excluded to the fullest extent allowed by Colorado law. Alpine Building Inspection Inc. and its employees assume no liability whatsoever for any damage or loss arising from or connected with this inspection and report, including discovering, or failing to inspect or discover any condition.

All of our inspection personnel follow NFPA 70E guidelines for arc flash protection based upon indicated potential energy levels obtained from an AFHA (arc flash hazard assessment) or in the absence of such labeling, the general hazard level guidelines for the voltages and equipment involved. We reserve the right to refuse to open or thermograph any equipment in cases where there is insufficient PPE (personnel protective equipment) available or an insufficient protective boundary for nearby personnel.

Guidelines to Reading this Report

We use calibrated cameras and equipment which are traceable to the NIST (National Institute of Standards) in the USA. Even so, the temperatures indicated in this report are subject to error from reflections of nearby heat sources, emissivity variations and other factors. Reference temperatures are established by comparing the temperature of similar structures under the same load conditions such as an adjacent phases in multi phase circuits. We report the conditions of equipment and recommend actions according to the type and amount of overheating relative to a reference. Items that are similar in structure and temperature are reported as “ordinary”. We avoid the term “normal” because normal will depend upon the ambient temperature and load conditions of the item in question. We provide inspection photos of items that appear “ordinary” to use as baseline data in future surveys for judging whether an item is functioning normally or not. If we detect a suspicious condition or excessive overheating, we will categorize that as an “Alert” and recommend that it be checked and verified. These are usually items that may or may not be “ordinary” depending upon what type of load the circuit is feeding. Items deemed as “Alert” or “Fault” will also have an assigned action level. The terms we use are defined as follows.

Status:

Ordinary: Items appear to be ordinary in temperature relative to the reference or differences are explained by load imbalance without excessive rise above ambient.

Alert: Item displays phase imbalance or rise above ambient which needs to be investigated and understood. These items should be checked and may or may not be ordinary depending upon the load conditions of the circuit in question.

Fault: Item displays non-uniform heating in a way that characterizes a loose or bad connection.

Action Levels:

Check: Item should be checked and circuit understood to explain the observed imbalance or heat level.

Monitor: Item shows slight overheating (less than 10F) relative to the reference temperature and should be checked for tightness and monitored for changes or worsening.

Severe: Item has developed overheating of between (10F and 50F) relative to the reference temperature and should be repaired at next scheduled shutdown or as soon as possible.

Critical: Item is showing acute overheating (greater than 50F) relative to the reference and should be shutdown and repaired immediately.

Items which were categorized as other than ordinary are listed on the Summary page at the end of this report.

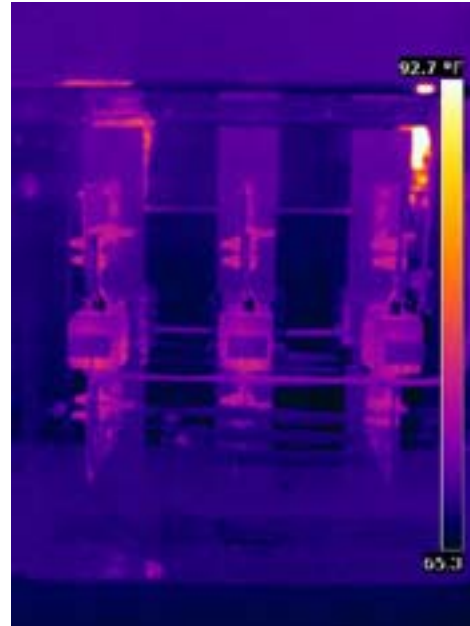
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Customer: Inspection Client
Site Address: Street Address Anytown, USA
Contact Person: Plant Engineer
Inspection Date: 3-22-2010

Photograph	Thermograph
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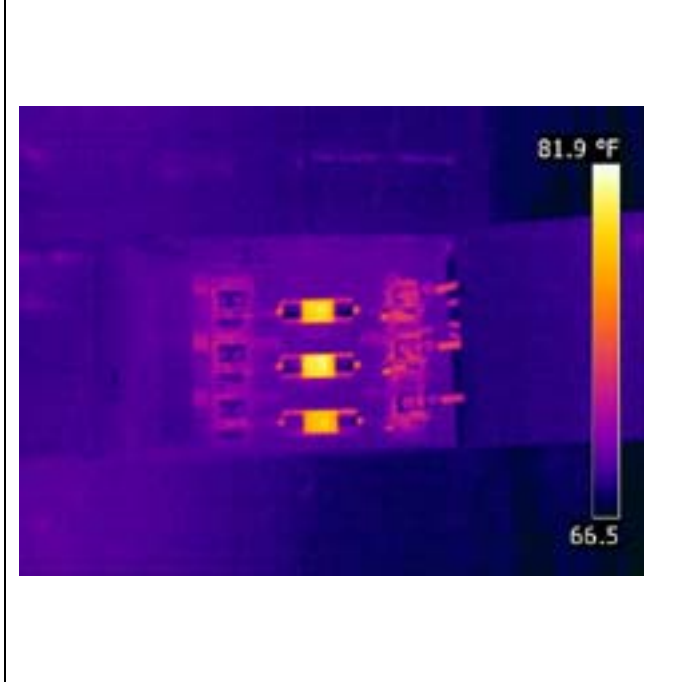
Building:	Main Building			Ambient Temp: 70F
Location:	Production Floor			Temp Spot 1:
Equipment:	Service Entrance Connections			Temp Spot 2:
Equipment ID:				Max Temp: 77.2F
Phase:	L1	L2	L3	Temp Rise Over Ambient: 7.2F
Load(A):				Status: Ordinary
Rated Load:				Action Level: None

Comments / Recommendations
 Apparent hot spot at upper right is only a reflection.

Correction / Repair
 Corrective Action Taken:
 Date:
 Signature:

Customer: Inspection Client
Site Address: Street Address Anytown, USA
Contact Person: Plant Engineer
Inspection Date: 3-22-2010

Photograph	Thermograph
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Building:	Main Building			Ambient Temp: 70F
Location:	Production Floor			Temp Spot 1:
Equipment:	PP6 Disconnect			Temp Spot 2:
Equipment ID:				Max Temp: 80.9F
Phase:	L1	L2	L3	Temp Rise Over Ambient: 10.9F
Load(A):				Status: Ordinary
Rated Load:				Action Level: None

Comments / Recommendations

Correction / Repair

Corrective Action Taken:

Date:

Signature:

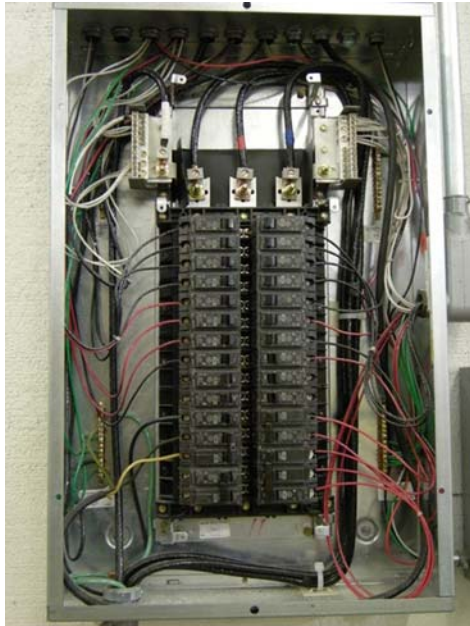
Customer: Inspection Client

Site Address: Street Address Anytown, USA

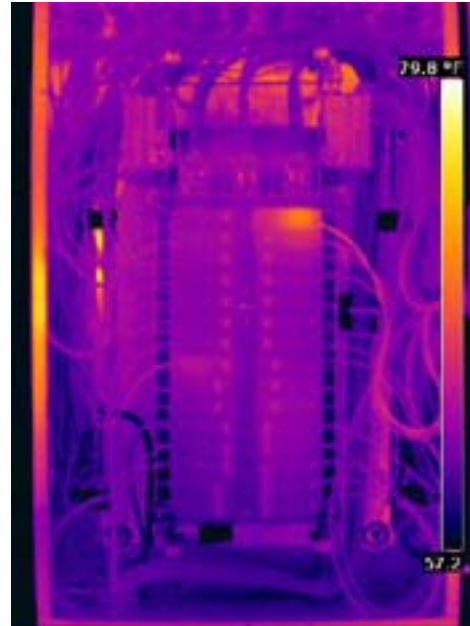
Contact Person: Plant Engineer

Inspection Date: 3-22-2010

Photograph



Thermograph



Building: Main Building

Location: Production Floor

Equipment: New East Wall 120 Panel

Equipment ID:

Phase: L1 L2 L3

Load(A):

Rated Load:

Ambient Temp: 70F

Temp Spot 1:

Temp Spot 2:

Max Temp: 77.5F

Temp Rise Over Ambient: 7.5F

Status: Ordinary

Action Level: None

Comments / Recommendations

Correction / Repair

Corrective Action Taken:

Date:

Signature:

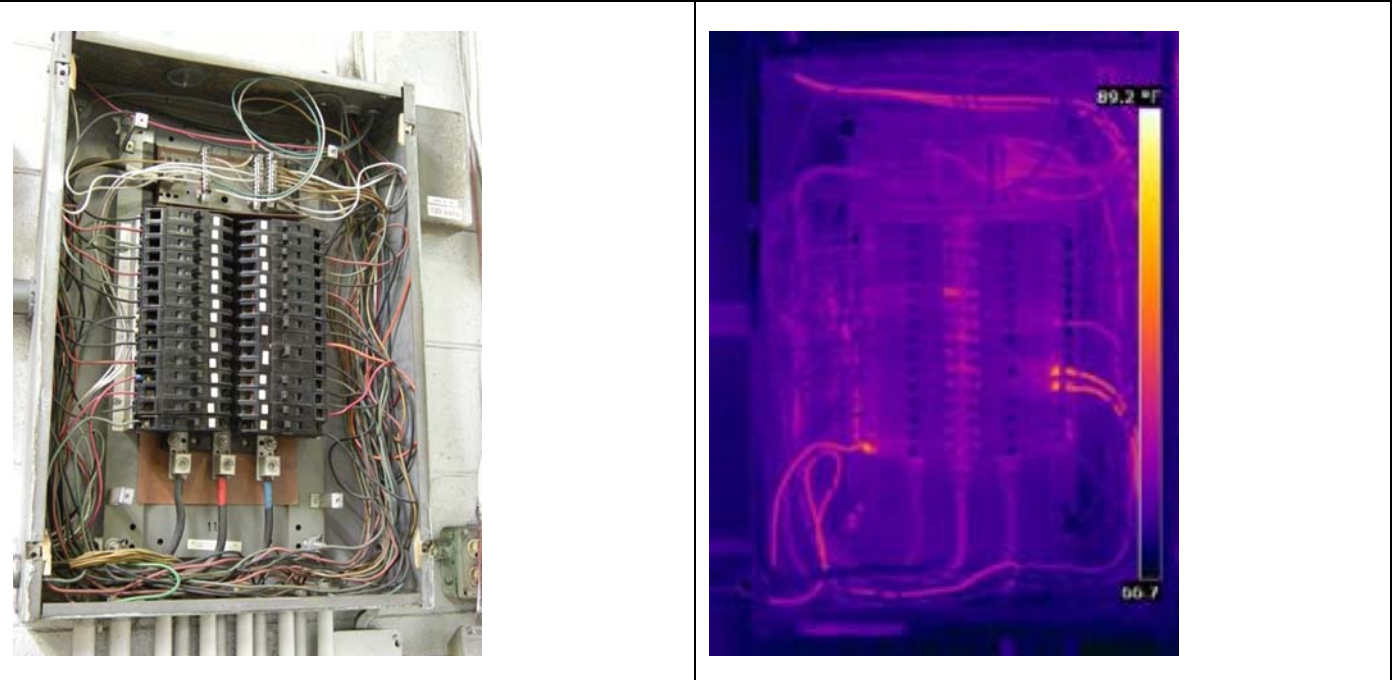
Customer: Inspection Client

Site Address: Street Address Anytown, USA

Contact Person: Plant Engineer

Inspection Date: 3-22-2010

Photograph	Thermograph
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Building: Main Building				Ambient Temp: 70F
Location: Production Floor				Temp Spot 1:
Equipment: West Wall LP4				Temp Spot 2:
Equipment ID:				Max Temp: 83.8F
Phase:	L1	L2	L3	Temp Rise Over Ambient: 13.8F
Load(A):				Status: Alert
Rated Load:				Action Level: Check

Comments / Recommendations

Check center bus connection on left fifth breaker down for tightness.

Correction / Repair

Corrective Action Taken:

Date:

Signature:

Customer: Inspection Client

Site Address: Street Address Anytown, USA

Contact Person: Plant Engineer

Inspection Date: 3-22-2010

Photograph	Thermograph
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Building: Main Building				Ambient Temp: 70F
Location: East Wall MCC				Temp Spot 1:
Equipment: Out Feed Motor				Temp Spot 2:
Equipment ID:				Max Temp: 109.2
Phase:	L1	L2	L3	Temp Rise Over Ambient: 39.2F
Load(A):				Status: Ordinary
Rated Load:				Action Level: None

Comments / Recommendations

Correction / Repair

Corrective Action Taken:

Date:

Signature:

Sample Inspection Summary

Action Item Summary:

Listed below are items that were deemed other than ordinary and require attention.

Action Level	Building	Location	Equipment	Item ID	Report Page #
Severe	Main	Production Floor	PP-1B North Wall	Breaker #4	18
Monitor	Main	Production Floor	LP1 North Wall	Breaker #1	15
Monitor	Main	Production Floor	PP1 North Wall	Breakers #5 & #6	17
Check	Main	Production Floor	North Wall Xfrm Disconnect	Right most phase	19
Critical	Main	Production Floor	East Wall Heater Fuses	Fuse B	22
Monitor	Main	Production Floor	Heater Relay	Left relay	23
Monitor	Main	Production Floor	East Wall 277 Panel	Breaker #11	30
Check	Main	Production Floor	West Wall LP4	Fifth breaker down on left (no #)	34

You are free to contact us with questions or concerns regarding our recommendations or this report. We maintain the report at our website (www.alpineinspection.com) for a minimum of 30 days and all reports are archived indefinitely at our office for future reference. Thanks for choosing Alpine Building Inspection for your electrical thermography needs, we appreciate your business.

Best regards,

