

Infrared Inspection

for

Pacific Crest Company



Site: Chicago Plant
821 – 33rd Avenue
Chicago, IL 60601

February 20, 2017



Thermal Imaging Partners

Thermal Imaging Partners, Inc.16192
Coastal Hwy., Lewes, DE, 19958
844.847.7226

Executive Overview



Thermal Imaging Partners

**Thermal Imaging Partners, Inc.16192
Coastal Hwy., Lewes, DE, 19958
844.847.7226**



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Thermal Imaging Partners, Inc.
16192 Coastal Hwy., Lewes, DE, 19958
844.847.7226

Description of Severity Levels

1-Critical – Highest priority level. Potential danger to life and limb exists, as well as eminent danger to equipment. Equipment is likely to deteriorate and will experience failure, causing this equipment and possibly down line equipment to malfunction and/or fail if not addressed immediately.

2 -Serious – Equipment failure is inevitable without immediate attention. Repair should be expedited ASAP. Maintenance of this equipment should be scheduled at the very next shut down, within 30 to 60 days. Close daily monitoring is also suggested if this equipment is not redundantly backed up.

3 -Important – If this is not redundant equipment, repair should be scheduled ASAP. A problem exists on this equipment and should be addressed during the next scheduled shut down. Weekly monitoring is also suggested to detect and evaluate deterioration.

4 -Minor -Problem is apparent and needs to be monitored on a regular basis. This is a low priority problem and down time should not occur, but monitoring is suggested.

5 -Normal – Equipment has no apparent problem at this time. However as loads change and duty cycles increase, this level may also increase. Some level of monitoring is still recommended.



Executive Summary Electrical

Overview: Pacific Crest , Chicago Plant

The Infrared Electrical Inspection was performed by Thermal Imaging Partners, LLC by a certified infrared Thermographer. All of the items inspected are listed in this IR report. Any anomalies are listed in order of priority based on the component's temperature rise, as measured from a reference component of equal type and load at the time of the inspection. Thermal Imaging Partners, LLC assumes no liability directly or indirectly as a result of this inspection.

Current Inspection No: 1004 February 20, 2004

Prior Inspection No: 1003 February 10, 2003

Priority	Temp Rise	Current Inspection	Prior Inspection	Percent of Change
1-Critical	91 - Above	0 = 0%	0 = 0%	NA
2-Serious	46 - 90	1 = 25%	2 = 100%	-50%
3-Important	21 - 45	2 = 50%	0 = 0%	NA
4-Minor	1 - 20	1 = 25%	0 = 0%	NA
5-Normal	0	0 = 0%	0 = 0%	NA
Total Tested Problems:		4	2	100%
Number of New Documented Problems:		3 = 75%	1 = 50%	200%
Number of Tested re-occurring Problems:		1 = 25%	1 = 50%	0%

Number of prior problems which were Not Tested this inspection : 1
 Number of Total Open Problems : 4
 Number of prior problems which tested Normal this inspection : 2

Problem Severity Definitions:

- Critical - Danger to life and limb, eminent danger to equipment
- Serious - Equipment failure is inevitable without immediate attention. Repair should be expedited ASAP
- Important - If this is not redundant equipment, repair should be scheduled ASAP.
- Minor - Problem is apparent and needs to be monitored on a regular basis.
- Normal - Equipment has no apparent problem at this time.

* Summary of reoccurring problems on following page(s)

Problem List by Temperature Rise



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Prioritized List by Temperature Rise

**Pacific Crest
Chicago Plant**

Report Date: 4/27/2012

Operation Priority Key

CTO = Critical to operation
ETO = Essential to operation
NON = Non-essential to operation
UNC = Un-Classified

Prior Inspection No : 1003 February 10, 2003	Current Inspection No : 1004 February 20, 2004	Asset ID	Operation Priority	Prior Insp#	Prior Prob#	Temp Rise	Curr Prob#	Temp Rise	% Load	Repair Priority	Repair Status
Equipment: Main Building \ 1 Floor \ Main Electrical Vault \ Main Swithboard \ Main Breaker			CTO	1003	E 2	55 F	E 1	55 F	25%	2-Serious	Open
Component: A Phase line side wire lug connection on circuit breaker - 100 amp											
Equipment: West Tower \ 3 Floor West \ Electrical Room WT-3 \ Electrical Room WT L3-1			CTO			F	E 4	27 F		3-Important	Open
Component: A Phase load side wire lug connection on circuit breaker - 100 amp 765675675											
Equipment: Building A \ Electrical Room 777 \ Electrical panel 444			CTO			F	E 3	27 F		3-Important	Open
Component: B Phase Fuse Clip on Fuse 100A											
Equipment: Building A \ electrical panel			CTO			F	E 2	13 F		4-Minor	Open
Component: C Phase line side wire lug connection on circuit breaker - 100 amp											

Problem Documentation



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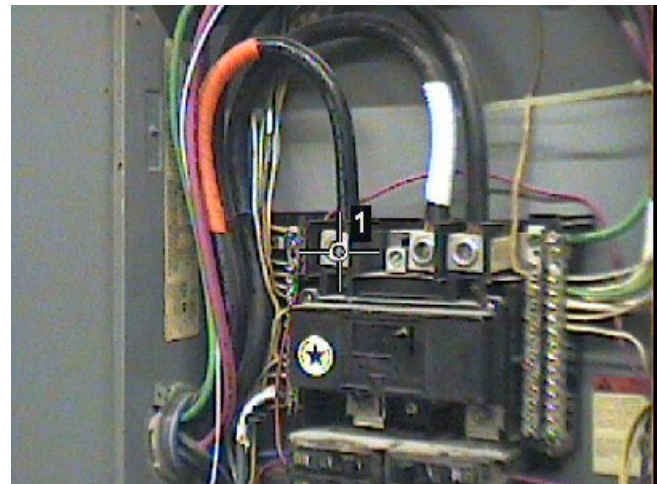
Page: 1
 Report Date: 4/27/2012
 Severity: Monitor

IR Image: IR_0036.jpg
 Photo: DC_0037.jpg

Infrared Inspection Report

Pacific Crest
 Chicago Plant

Asset ID: Barcode:
 Location: Main Building
 1 Floor
 Main Electrical Vault
 Main Switchboard



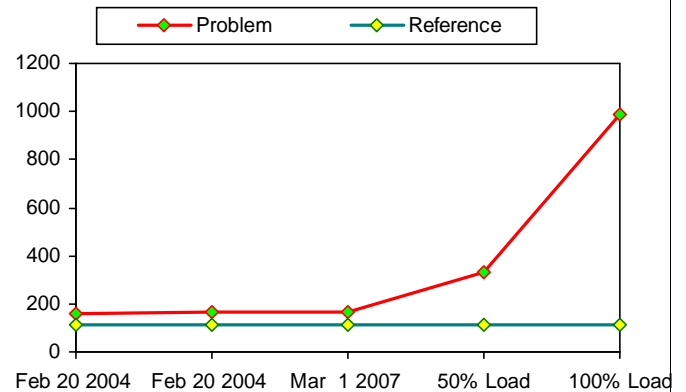
Problem	Reference	Temperature Difference	Ambient Temperature
A Phase: 165 F	C Phase: 110 F	55 F	78

Load Test Results:

A Phase: 25 Neutral:
 C Phase: 25 Rated Load: 100
 % Rated Load: 25

Problem:

A Phase line side wire lug connection on circuit breaker - 100 amp



History of Temp Rises and Loads Tested vs. Normalized Load to 50%

Recommendation:

Mar 1 2007 : 55F@25% vs 220F@50% / 15% Chg in 1105 Days
 Feb 20 2004 : 55F@25% vs 220F@50% / 15% Chg in 0 Days
 Feb 20 2004 : 48F @25% vs 192F@50%



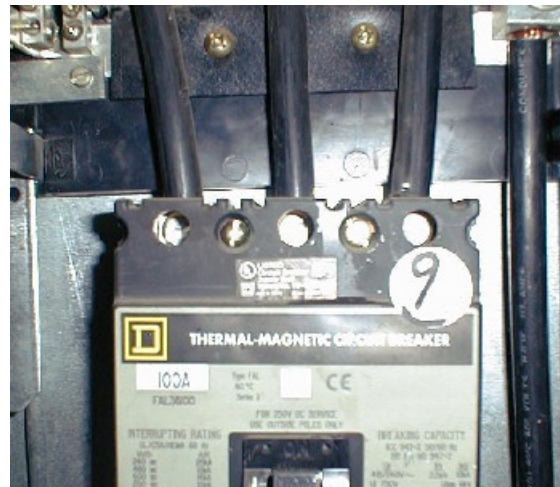
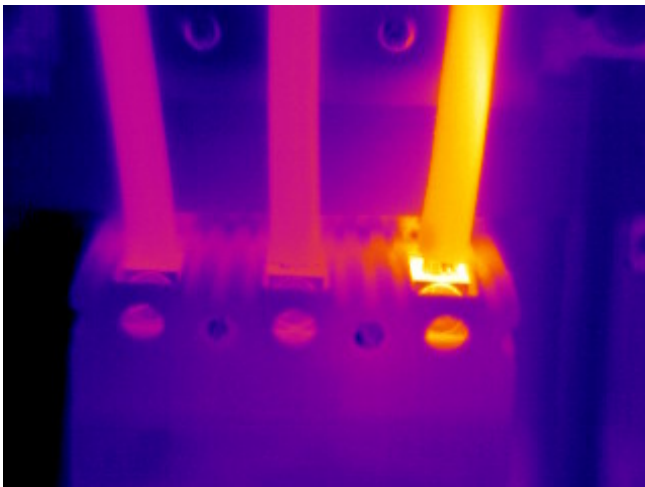
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Page: 2
 Report Date: 4/27/2012
 Severity: Monitor

IR Image: IR101.bmp
 Photo: Ph101a.jpg

Infrared Inspection Report

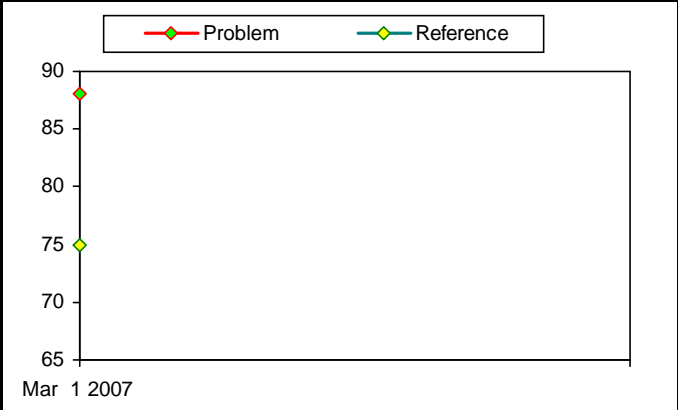
Pacific Crest Chicago Plant	Asset ID: Barcode: Location: Building A electrical panel
--	---



Problem	Reference	Temperature Difference	Ambient Temperature
A Phase: 88 F	C Phase: 75 F	13 F	68

Load Test Results:

A Phase: **Neutral:**
C Phase: **Rated Load:**
 % Rated Load:



Problem:
 C Phase line side wire lug connection on circuit breaker - 100 amp

Recommendation:

Mar 1 2007 : No load information



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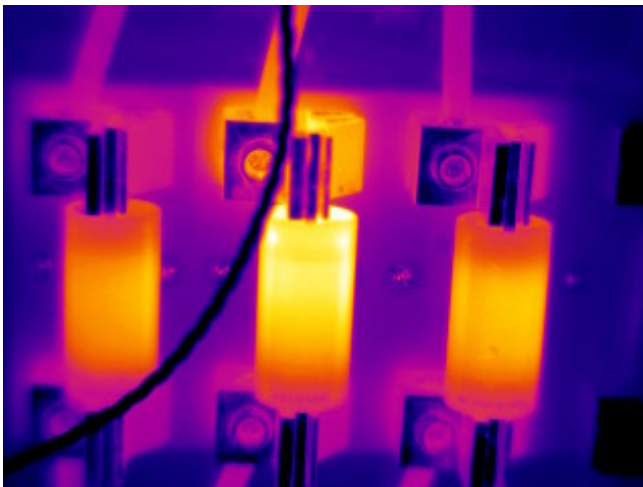
Page: 3
 Report Date: 4/27/2012
 Severity: Monitor

IR Image: IR100.bmp
 Photo: Ph100a.jpg

Infrared Inspection Report

Pacific Crest
 Chicago Plant

Asset ID: Barcode:
 Location: Building A
 Electrical Room 777
 Electrical panel 444



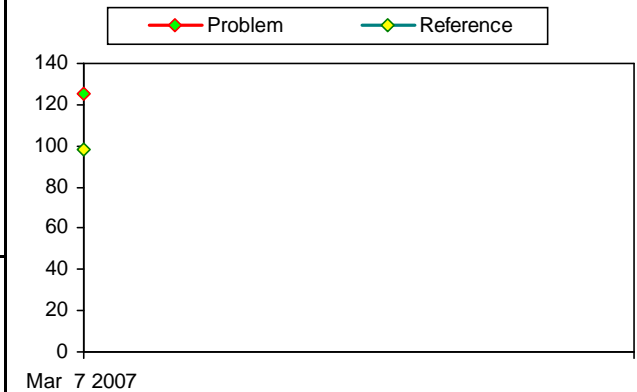
Problem	Reference	Temperature Difference	Ambient Temperature
B Phase: 125 F	C Phase: 98 F	27 F	68

Load Test Results:

B Phase: **Neutral:**
C Phase: **Rated Load:**
 % Rated Load:

Problem:

B Phase Fuse Clip on Fuse 100A



History of Temp Rises and Loads Tested vs. Normalized Load to 50%

Recommendation:

Mar 7 2007 : No load information



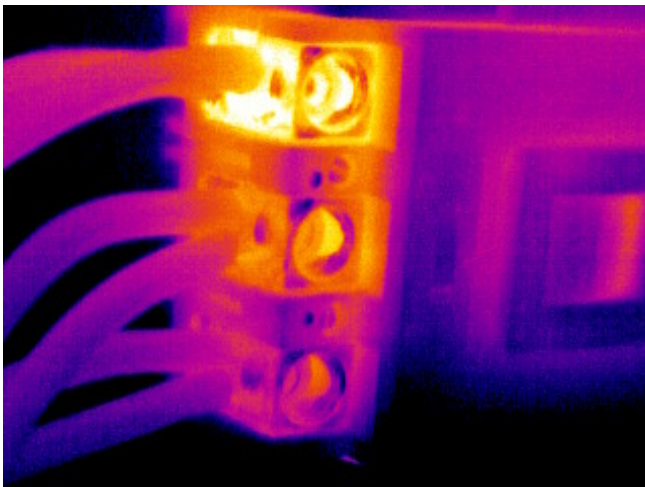
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Page: 4
Report Date: 4/27/2012
Severity: Monitor

IR Image: B0213-05.bmp
Photo: 12020014.JPG

Infrared Inspection Report

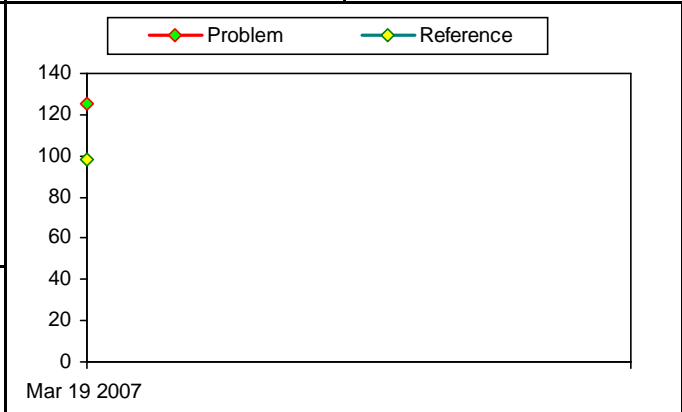
Pacific Crest Chicago Plant	Asset ID: Barcode: Location: West Tower 3 Floor West Electrical Room WT-3 Electrical Room WT L3-1
--	--



Problem	Reference	Temperature Difference	Ambient Temperature
A Phase: 125 F	B Phase: 98 F	27 F	68

Load Test Results:

A Phase:	Neutral:
B Phase:	Rated Load:
	% Rated Load:



Problem:
A Phase load side wire lug connection on circuit breaker - 100 amp 765675675

Recommendation:

Mar 19 2007 : No load information

Work Orders



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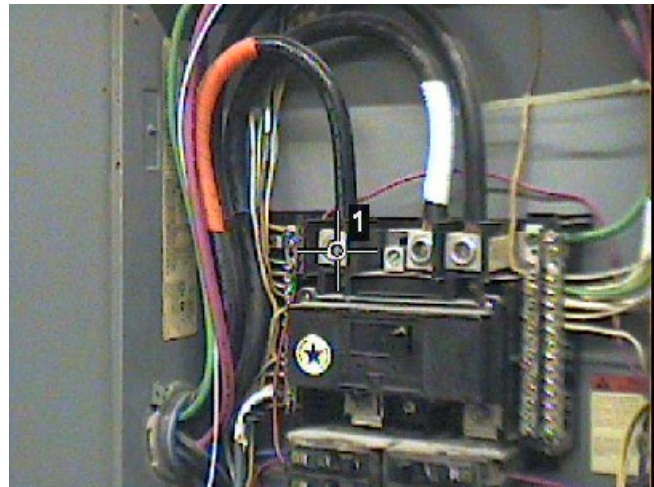


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Page: 1
Report Date: 4/27/2012
Severity: Monitor

Infrared Inspection Work Order

Pacific Crest Chicago Plant	Asset ID: Location: Main Building 1 Floor Main Electrical Vault Main Swithboard	Barcode:
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Infrared Filename	Infrared Date	Photo Filename	Photo Date
IR_0036.jpg	4/27/2012	DC_0037.jpg	8/27/2003

Problem	Reference	Temperature Difference
A Phase: 165 F	C Phase: 110 F	55 F

Problem: A Phase line side wire lug connection on circuit breaker - 100 amp

Recommendation:

Repaired By: _____ **Repair Date:** _____

Repair Notes:

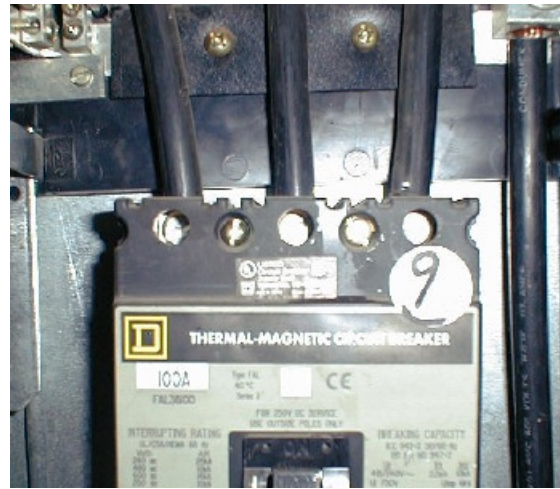
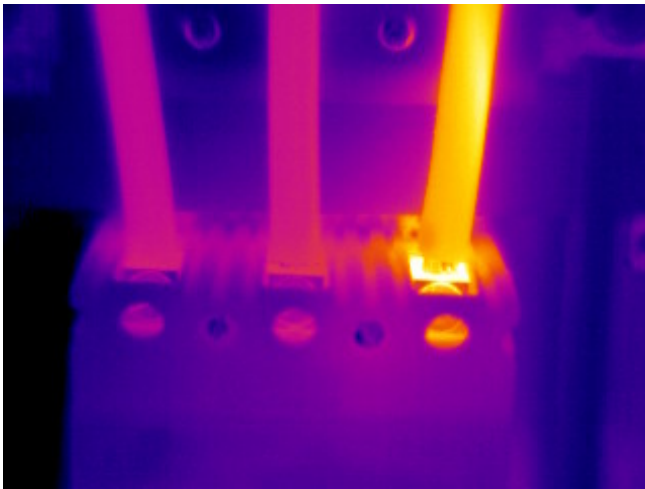


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Page: 2
Report Date: 4/27/2012
Severity: Monitor

Infrared Inspection Work Order

Pacific Crest Chicago Plant	Asset ID: Location: Building A electrical panel	Barcode:
--	--	-----------------



Infrared Filename	Infrared Date	Photo Filename	Photo Date
IR101.bmp	2/13/2001	Ph101a.jpg	4/27/2012

Problem	Reference	Temperature Difference
A Phase: 88 F	C Phase: 75 F	13 F

Problem: C Phase line side wire lug connection on circuit breaker - 100 amp

Recommendation:

Repaired By: _____ **Repair Date:** _____

Repair Notes:



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Page: 3

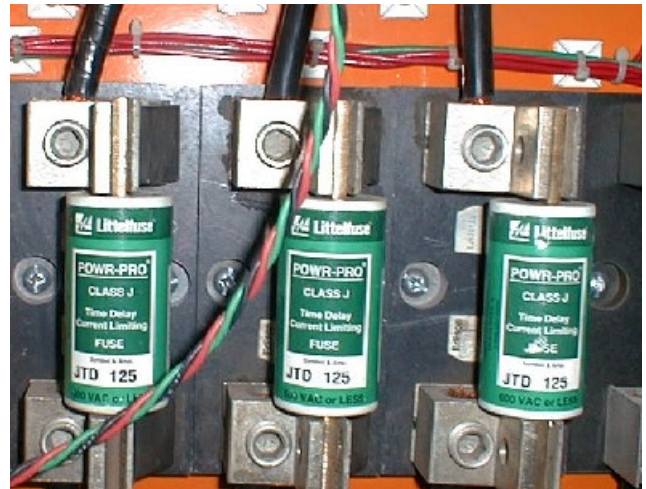
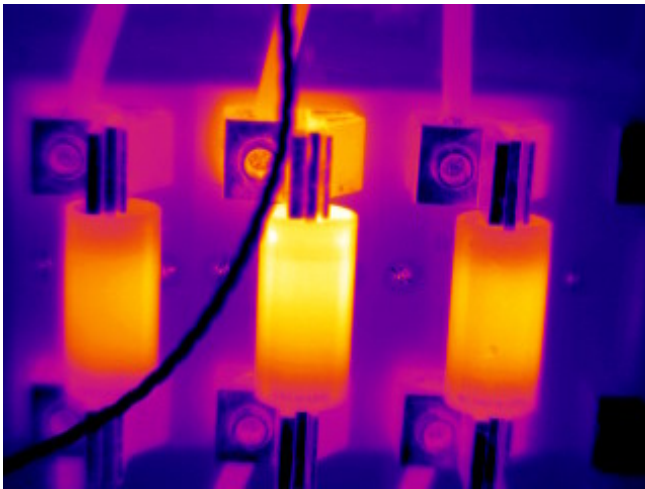
Report Date: 4/27/2012

Severity: Monitor

Infrared Inspection Work Order

Pacific Crest
Chicago Plant

Asset ID: Barcode:
Location: Building A
 Electrical Room 777
 Electrical panel 444



Infrared Filename	Infrared Date	Photo Filename	Photo Date
IR100.bmp	2/21/2001	Ph100a.jpg	4/27/2012

Problem	Reference	Temperature Difference
B Phase: 125 F	C Phase: 98 F	27 F

Problem: B Phase Fuse Clip on Fuse 100A

Recommendation:

Repaired By:

Repair Date:

Repair Notes:



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Page: 4

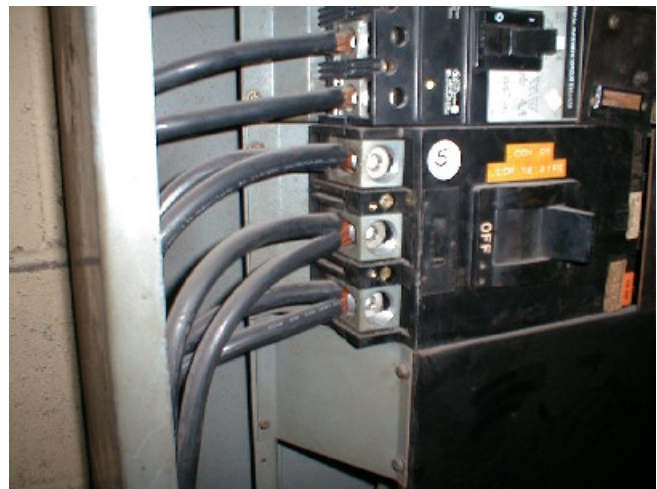
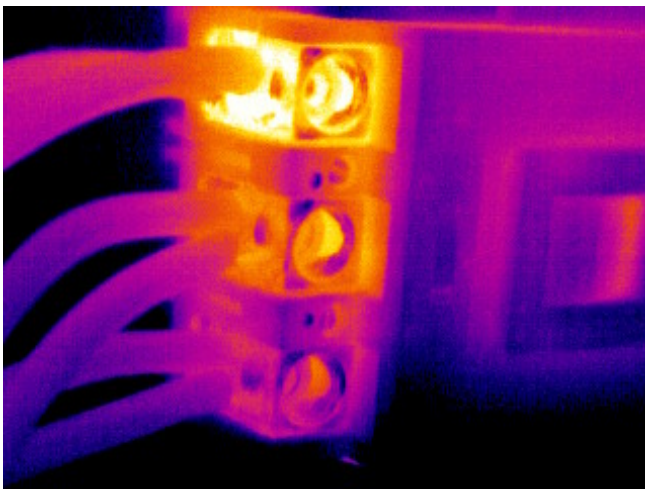
Report Date: 4/27/2012

Severity: Monitor

Infrared Inspection Work Order

Pacific Crest
Chicago Plant

Asset ID: Barcode:
Location: West Tower
 3 Floor West
 Electrical Room WT-3
 Electrical Room WT L3-1



Infrared Filename	Infrared Date	Photo Filename	Photo Date
B0213-05.bmp	2/13/2001	12020014.JPG	12/2/2001

Problem	Reference	Temperature Difference
A Phase: 125 F	B Phase: 98 F	27 F

Problem: A Phase load side wire lug connection on circuit breaker - 100 amp 765675675

Recommendation:

Repaired By:

Repair Date:

Repair Notes:

Inspection Inventory



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Pacific Crest
Chicago Plant

Current Inspection Inventory Status by Inspection Order

Operation Priority Key

CTO = Critical to operation
 ETO = Essential to operation
 NON = Non-essential to operation
 UNC = Un-Classified

Equipment Test Status Key

TBT = To Be Tested
 NT/NL = Not Tested/No Load
 NT/TC = Not Tested/Time Constraint
 NT/UR = Not Tested/Under Repair
 NT/LO = Not Tested/Locked Out
 NT/NA = Not Tested/Not Available
 NT/TC = Not Tested/Time Constraint
 NT/NS = Not Tested/Not Specified
 NSF1 = Not Selected for this insp.

Report Date: 4/27/2012

Inspected By : Joe Thermographer

Prior Inspection No: 1003

Current Inspection No: 1004

Total # of Equipment: 53

Equipment Tested this inspection: 23

Tested	Equipment Name	Equipment Priority	Problem #	Barcode	Asset ID	Test Status Notes
TBT	Outside Service Entrance	CTO				
TESTED	Pole 555-808-3421	CTO				
NTNA	Pad Mount TSFR 325-453	CTO				
TBT	West Tower	CTO				
TBT	1 Floor West	CTO				
TBT	Electrical Room WT-1	CTO				
TESTED	Lighting Panel WT L1-1	CTO				
TESTED	Lighting Panel WT L1-2	CTO				
TESTED	Lighting Panel WT L1-3	CTO				
TESTED	Lighting Panel WT L1-4	CTO				
TBT	2 Floor West	CTO				
TBT	Electrical Room WT-2	CTO				
TESTED	Electrical Room WT L2-1	CTO				
TESTED	Electrical Room WT L2-2	CTO				
NTNL	Electrical Room WT L2-3	CTO				
TBT	3 Floor West	CTO				
TBT	Electrical Room WT-3	CTO				
TESTED	Electrical Room WT L3-1	CTO	E4			
TBT	Electrical Room WT L3-2	CTO				
TBT	Electrical Room WT L3-3	CTO				
TBT	West Elevator Penthouse	CTO				
NTNL	Breaker Panel LV-1	CTO				
TBT	Main Building	CTO				
TBT	1 Floor	CTO				
TBT	Main Electrical Vault	CTO				
TBT	Main Swithboard	CTO				
TESTED	Main Breaker	CTO	E1			
TESTED	North Tower Breaker	CTO				
TESTED	South Tower Breaker	CTO				
TESTED	Main Building Breaker	CTO				
TESTED	Distr. Panel 1A Breaker	CTO				
TESTED	Distr. Panel 1A	CTO				
TESTED	Lighting Panel L1	CTO				
TESTED	Lighting Panel L2	CTO				
TBT	Lighting Panel L3	CTO				
TBT	MCC 1	CTO				
TESTED	Sup Fan 1	CTO				
TBT	Exh Fan 1	CTO				
TBT	Mechanical Room	CTO				
TBT	Main Chill Water Pump Motor	CTO				
TBT	Roof	CTO				
TBT	Building A	CTO				
TBT	Electrical Room 555	CTO				
TESTED	Electrical Panel 123	CTO				
TESTED	Electrical panel 444	CTO		987	88888	



Thermal Imaging Partners
Pacific Crest
Chicago Plant

Current Inspection Inventory Status by Inspection Order

Operation Priority Key

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 NT/UR = Not Tested/Under Repair
 NT/LO = Not Tested/Locked Out
 NT/NA = Not Tested/Not Available
 NT/TC = Not Tested/Time Constraint
 NT/NS = Not Tested/Not Specified
 NSFI = Not Selected for this insp.

Report Date: 4/27/2012
Inspected By : Joe Thermographer

Prior Inspection No: 1003
 Current Inspection No: 1004
 Total # of Equipment: 53
 Equipment Tested this inspection: 23

Tested	Equipment Name	Equipment Priority	Problem #	Barcode	Asset ID	Test Status Notes
TESTED	Electrical panel 445	CTO				
TBT	Electrical Room 777	CTO				
TESTED	Electrical Panel 123	CTO				
TESTED	Electrical panel 444	CTO	E3			
TESTED	electrical panel	CTO	E2			

Inspection History



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**Pacific Crest
Chicago Plant**

Inspection History

Problem Type Key

E = I/C Electrical
 TD = T/D Electrical
 M = Mechanical
 V = Visual Inspection

Prior Inspection No: 1003
 Current Inspection No: 1004

Equipment Test Status Key

TBT = To Be Tested
 NT/NL = Not Tested/No Load
 NT/TC = Not Tested/Time Constraint
 NT/UR = Not Tested/Under Repair
 NT/LO = Not Tested/Locked Out
 NT/NA = Not Tested/Not Available
 NT/TC = Not Tested/Time Constraint
 NT/NS = Not Tested/Not Specified
 NSF1 = Not Selected for this insp.

Report Date: 4/27/2012

Inspection # and Inspection Date

Equipment Designation	Asset ID	1000 2/7/2000	1001 2/12/2001	1002 2/11/2002	1003 2/10/2003	1004 2/20/2004
Building A						TBT
electrical panel						E2
Electrical Room 555						TBT
Electrical Panel 123						TESTED
Electrical panel 444	88888					TESTED
Electrical panel 445						TESTED
Electrical Room 777						TBT
Electrical Panel 123						TESTED
Electrical panel 444						E3
Main Building		TBT	TBT	TBT	TBT	TBT
1 Floor		TBT	TBT	TBT	TBT	TBT
Main Electrical Vault		TBT	TBT	TBT	TBT	TBT
Distr. Panel 1A		TBT	NTTC	NTTC	TBT	TESTED
Lighting Panel L1		TBT	NTTC	NTTC	TBT	TESTED
Lighting Panel L2		TBT	NTTC	NTTC	TBT	TESTED
Lighting Panel L3		TBT	NTTC	NTTC	TBT	TBT
Main Swithboard		TBT	TBT	TBT	TBT	TBT
Distr. Panel 1A Breaker		TBT	TESTED	NTTC	TBT	TESTED
Main Breaker		TBT	NTNL	E3	E2	E1
Main Building Breaker		TBT	TESTED	NTTC	TBT	TESTED
North Tower Breaker		TBT	TESTED	NTTC	TBT	TESTED
South Tower Breaker		TBT	NTNL	NTTC	TBT	TESTED
MCC 1		TBT	TBT	TBT	TBT	TBT
Exh Fan 1		E2	E2	E2	TBT	TBT
Sup Fan 1		E1	E1	E1	E1	TESTED
Mechanical Room		TBT	TBT	TBT	TBT	TBT
Main Chill Water Pump Motor		TBT	TESTED	NTTC	TBT	TBT
Roof		TBT	TBT	TBT	TBT	TBT
Outside Service Entrance		TBT	TBT	TBT	TBT	TBT
Pad Mount TSFR 325-453		TBT	NTTC	TESTED	TBT	NTNA
Pole 555-808-3421		TD1	TD1	TESTED	TBT	TESTED
West Tower		TBT	TBT	TBT	TBT	TBT
1 Floor West		TBT	TBT	TBT	TBT	TBT
Electrical Room WT-1		TBT	TESTED	TBT	TBT	TBT
Lighting Panel WT L1-1		TBT	E3	TESTED	TBT	TESTED



Thermal Imaging Partners

Pacific Crest
Chicago Plant

Inspection History

Problem Type Key

E = I/C Electrical
TD = T/D Electrical
M = Mechanical
V = Visual Inspection

Prior Inspection No: 1003
Current Inspection No: 1004

Equipment Test Status Key

TBT = To Be Tested
NT/NL = Not Tested/No Load
NT/TC = Not Tested/Time Constraint
NT/UR = Not Tested/Under Repair
NT/LO = Not Tested/Locked Out
NT/NA = Not Tested/Not Available
NT/TC = Not Tested/Time Constraint
NT/NS = Not Tested/Not Specified
NSFI = Not Selected for this insp.

Report Date: 4/27/2012

Inspection # and Inspection Date

Equipment Designation	Asset ID	1000	1001	1002	1003	1004
		2/7/2000	2/12/2001	2/11/2002	2/10/2003	2/20/2004
Lighting Panel WT L1-2		TBT	TESTED	TESTED	TBT	TESTED
Lighting Panel WT L1-3		TBT	TESTED	TESTED	TBT	TESTED
Lighting Panel WT L1-4		TBT	TESTED	TESTED	TBT	TESTED
2 Floor West		TBT	TBT	TBT	TBT	TBT
Electrical Room WT-2		TBT	TBT	TBT	TBT	TBT
Electrical Room WT L2-1		TBT	TESTED	TESTED	TBT	TESTED
Electrical Room WT L2-2		TBT	TESTED	TESTED	TBT	TESTED
Electrical Room WT L2-3		TBT	TESTED	TESTED	TBT	NTNL
3 Floor West		TBT	TBT	TBT	TBT	TBT
Electrical Room WT-3		TBT	TBT	TBT	TBT	TBT
Electrical Room WT L3-1		TBT	TESTED	TESTED	TBT	E4
Electrical Room WT L3-2		TBT	TESTED	TESTED	TBT	TBT
Electrical Room WT L3-3		TBT	TESTED	TESTED	TBT	TBT
West Elevator Penthouse		TBT	TBT	TBT	TBT	TBT
Breaker Panel LV-1		TBT	NTTC	NTTC	TBT	NTNL

Baseline Trending



Thermal Imaging Partners

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Thermal Imaging Partners
Pacific Crest
Chicago Plant

Infrared Baseline Equipment Report

Page: 1
Report Date: 4/27/2012

Prior Inspection #: 1003
Prior Inspection Date: 2/10/2003
Current Inspection #: 1004
Current Inspection Date: 2/20/2004

Operation Priority Key

CTO = Critical to operation
ETO = Essential to operation
NON = Non-essential to operation
UNC = Un-Classified

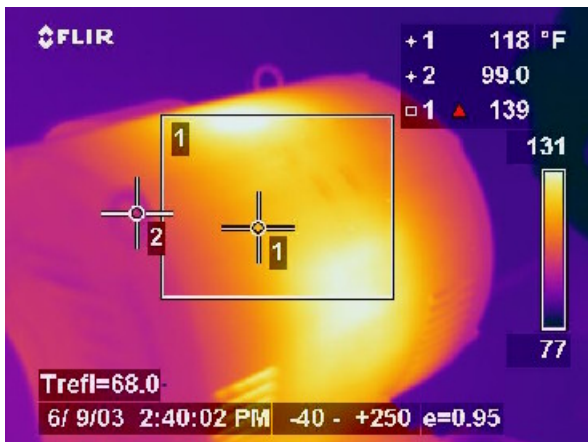
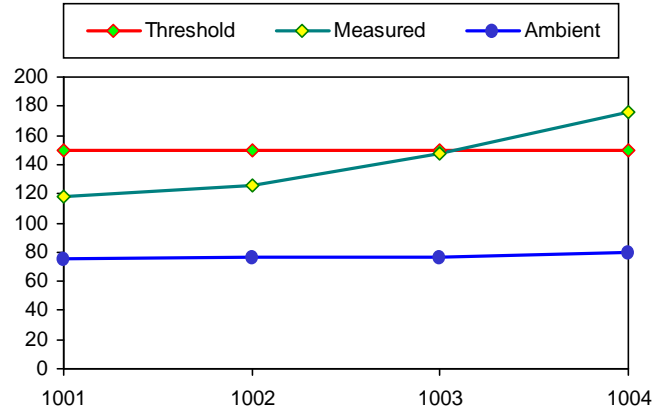
Equipment Location: Main Building \ 1 Floor \
Mechanical Room \ Main Chill
Water Pump Motor

Equipment ID:

Barcode:

Manufacturer:

Operation Priority: CTO



IR_060903_003.jpg



DC_060903_005.jpg

Inspection History:

Inspection No	Date Inspected	Test Status	Measured Temp	Threshold Temp	Ambient Temp	Status Note	Customer Notes
1001	2/19/2004	TESTED	118 F	150 F	75 F		
1002	2/19/2004	NTTC	126 F	150 F	77 F		
1003	2/19/2004	TBT	147 F	150 F	77 F		
1004	3/1/2007	TESTED	176 F	150 F	80 F		



Thermal Imaging Partners

Thermal Imaging Partners, Inc.

Infrared Inspection General Purpose Documentation & Limitations

The purpose of conducting an infrared inspection is to acquire instantaneous information and supporting infrared and digital images of equipment, as well as all pertinent data as it relates to the physical condition of the electrical distribution system and/or mechanical equipment at and during the time of this IR inspection. Loose or poor connections, unbalanced loads, loose bus joints, improperly installed fuses etc. can be identified non-invasively and on the spot providing you with a **Predictive Maintenance Capability**. These conditions are characterized by increased resistance and accompanied by temperature rise. Every effort was made to identify such conditions as they exist during this IR inspection by our highly-experienced Level II & III Certified Infrared Thermographer(s) and captured with our Top of the Line Thermal Imaging Camera Equipment.

All Thermal Imaging Partners, Inc. (TIP, Inc.) commercial infrared inspections are conducted while the electrical system is loaded and under normal workday load conditions by an experienced Level II or Level III Certified Infrared Thermographer. Our TIP, Inc. Thermography Specialists bring an uncommonly vast amount of experience to every commercial electrical Infrared Inspection we conduct.

In some cases, the TIP, Inc. Thermographer may be assisted by qualified customer personnel for panel door removal and replacement and visual inspection and discussion of component functionality etc. And in some cases, when requested by the customer TIP, Inc. can and will provide a highly skilled and experienced electrician for such duties as part of our IR team.

Your infrared inspection & report is intended to assist you in reducing the possibility of damage to equipment, loss of property, reduction in repair costs, elimination of down time, increase safety, and provide you with a cost benefit analysis and function as part of your "Predictive Maintenance Program".

This inspection was based upon a qualitative inspection of your electrical assets whereby the reflected temperatures, the emissivity of the target, ambient room temperatures, relative humidity, the working distance from the target and wind speed if present are all components of this inspection. The Delta-T method of evaluating potential thermal anomalies was used to determine if there were any exceptions/problems.

The Delta T criteria reported is based upon the temperature rise of the exception above the temperature of a defined reference, which is typically the ambient air temperature, a similar component under the same conditions or the maximum allowable temperature of the component.

Your IR inspection and report is intended to bring to your attention hazards and any potential lack of protection. It is NOT intended to imply that all other hazards and conditions are under control at the time of this inspection.

NO LIABILITY IS ASSUMED BY REASON OF THIS REPORT OR THE INSPECTION UPON WHICH IT IS BASED, as this IR report is advisory in nature and you; the customer/facilities and/or plant manager or engineer in charge must make the final decision regarding the potential root causes of identified problems, the repair requirements, the recommendations and the prioritization of such repairs.

As experienced Thermographers; many of whom are also electricians or along with the assistance of your provided electrician we have done our best in discussions with the appropriate on-site personnel to inform them of the problems identified during this IR inspection. We also participated in discussions related to the identified problems, but the final decisions and procedures for repairs are the customer's responsibilities TIP will also not take any responsibility for previously damaged panel doors, broken panel door clips, or other damaged or faulty equipment required to be handled by the IR inspection team during IR inspections, or any potential outages this damage equipment may cause during normal required handling. Such damaged equipment will of course be noted and brought to the attention of the appropriate personnel. TIP will also not be held responsible for any wiring caught by panel door fasteners/clips that causes any sort of electrical outage when the wiring has not been previously organized by the customer's personnel so as not to come in contact with any panel door fasteners/clips.

We are confident that we have made every attempt to identify all potential problems of equipment we tested provided the loads were appropriate, but conditions can change rapidly for a variety of reasons within hours, days or weeks of your inspection completion. We recommend addressing the identified problems as soon as possible upon receipt of your report. Any serious, critical, or even important problems have been brought to the attention of appropriate customer personnel immediately while we were on site, or will be ASAP upon delivery of problem documentation and followed up with your final IR report. Our goal is to help avoid down time, improve safety and reliability, reduce risk and unplanned and expensive repairs, reduce stress and frustration, and Help You Save Both Time and Money. Unplanned down time and or emergency repairs are always expensive in more ways than one and in many cases down time is either extremely costly and/or simply not an option.

Infrared Inspection is the best, fastest and most cost-effective technology to utilize for the inspection of electrical systems problems most of which remain undetectable by the human eye and usually don't get addressed until it's too late and the equipment has already failed. Every effort has been made to conduct a comprehensive and thorough IR inspection for you and we are always at your service to answer any questions or be of assistance in any way we can. We also recommend that all identified problems documented be re-inspected via IR inspection once any repair procedures have been completed to assure that the problems have been resolved. Our goal is to strive for excellence, always exceed our customer's expectations and to develop strong customer relationships for life!

However, we can only claim to be as accurate as conditions allow at the time of the IR inspection. There may be anomalies that are missed due to decreased load, less than normal operating conditions, inaccessibility and other potential reasons which may have been present or changed during this inspection or may arise in the days, weeks and/or months to come.

NOTE:

TIP, Inc. will not take any responsibility for missing a problem due to the customer not having the normal operational load on the equipment in question as so stated in our pre-inspection Statement of Work. It was suggested that if equipment cannot be made under normal load conditions at the time of the IR inspection that we return and IR inspect that equipment when it is possible to put it into normal operational load conditions. This equipment would then be tested as part of this inspection and IR report.

Professional Standards:

The standard of care for all professional services performed or furnished by TIP, Inc. under the agreed upon and signed SOW, PO and/or contract were furnished with the care and skill used by members of the Thermographic profession practicing under similar circumstances at the same time and in the same locality TIP makes no warranties, express or implied, under this agreement or otherwise, in connection with services provided.

We performed the above referenced services and those stated within our Statement of Work in a professional manner consistent with the care and skill ordinarily exercised by professionals engaged in this field and within all required national and state code requirements including the NFPA 70E Electrical Standard for Electrical Safety in the Workplace and those stated in our SOWTIP utilizes all appropriate personal protective equipment (PPE) whenever required and as covered in our SOW reserves the right to refuse imaging services whenever we deem the situation to be either unsafe or too dangerous. This includes TIP, Inc. personnel, customer's employees and or any persons within the area of concern identified by our Thermographer and/or a member of our IR inspection team.

As previously mentioned our goal is to exceed our customer's expectations, our referral base and our collection of customer testimonials well supports those efforts.

Limitation of Liability as Stated in Our SOW:

TIP, Inc. is fully insured by The Hartford Insurance Company and Certificate of Insurance was provided prior to any on site electrical systems IR inspection work. Our liability outside this coverage for negligence or breach of contract is specifically limited to any amounts paid by clients for the services rendered. We shall not be liable for any additional damages, whether arising from breach of warranty, contract, tort, or principles of indemnity.

Our IR report was prepared for the exclusive use of the customer. All exceptions/problems are to be reviewed by the customer and discussed with TIP prior to authorizing any repairs.

TIP's IR inspection team is available for consultation of all identified exceptions/problems prior to undertaking repair procedures. We do not intend for any other outside party or contractor to rely on this report for any reason without previous consultation with the customer after the customer has had discussion with TIP regarding any identified problems. An authorization and repair briefing by the customer should be held prior to the commencement of repairs.

Any other outside party or contractor who engages in repairs or in some cases intrusive troubleshooting exploration without the aforementioned customer consultation and after the customer's review with TIP's IR team and authorization by the customer, also agrees and does hereby release from liability and agrees to indemnify and hold Thermal Imaging Partners, Inc., TIP's Thermographer and any of its directors, officers, employees, agents, sub-contractors, authorized associates, affiliate groups, vendors, successors or assigns harmless for any and all damages, losses, or expenses incurred as a result of such repair(s) and/or intrusive exploration activities at any of the locations covered within this inspection and/or this IR report.

Entire Agreement:

The TIP SOW, PO and/or agreed to customer contract must have been agreed to and signed prior to the commencement of work and will have contained all of the terms and conditions agreed to by the parties and no other contract or agreement, oral or otherwise, regarding the subject matter of the aforementioned documents shall be deemed to exist or bind either of the parties.

In the Unlikelihood of Dispute - Alternative Dispute Resolution-Mediation to be Implemented.

If a dispute arises out of, or relates to the Agreement or its breach, and if the dispute cannot be settled through direct discussions the parties agree to first endeavor to settle the dispute in an amicable manner by mediation by a certified mediator or a certified mediation service. This action however is not binding on either party hereto and in no way, will remove any legal action desired by either party.

Again, we thank you for the opportunity and the privilege to be of service. We look forward to a long lasting and happy relationship with you and your organization for many years to come.

Sincerely,

John Smith
Level III Certified Infrared Thermographer #66525
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