



Stockton Infrared Thermographic Services, Inc.
presents

Sample Report

**Infrared Thermographic Survey
Of Electrical Switchgear
at the facilities of
Acme Computer Centers**

**ACME
Computer
Centers**





*Stockton Infrared
Thermographic Services, Inc.
8472 Adams Farm Road
Randleman, NC 27317-7331
(800) 248-7226*

January 1, 2005

Mr. John Q. Client
Acme Computer Centers
123 Main Street
Anytown, USA 12345
(555) 248-7226
jqclient@acmecomputercenters.com

**RE: Infrared Survey of Electrical Switchgear
Acme Computer Centers – Center #1
Anytown, USA**

Dear Mr. Client:

Thank you for your continued confidence in our services. Please find herein, the results of the qualitative infrared thermographic survey which was conducted at your facilities.

This report is respectfully submitted for your review.

<u>SECTIONS</u>	<u>CONTENTS</u>
SECTION 1	Cover letter
SECTION 2	Summary & Recap
SECTION 3	Data Log (complete list of equipment inspected)
SECTION 4	Thermographic Reports (problem equipment found)
SECTION 5	Repair Guide (list of problem equipment and severity rating)
ENCLOSED	CD-ROM (contains all files and software to open IR images)
ENCLOSED	VHS Video tape (all equipment-not just problem equipment)

IMPORTANT NOTICE: Infrared Thermography is not a substitute for visual and/or other instrumental inspection techniques and should be a regular part of the overall P/PM (preventive/predictive maintenance) program at your facilities.

All work performed by Stockton Infrared is 100% satisfaction guaranteed. If you have a question or comment please let us know by calling (800) 248-7226. We are looking forward to working with you on your next scheduled survey.

Sincerely yours,

Certified Infrared Thermographer #3583
GRS/vcs



Visit us on the World Wide Web at:

www.stocktoninfrared.com
www.CompuSCANIR.com

SECTION 2A SUMMARY



Project Information

Report to : John Client
Company : Acme Computer Centers
Plant ID : Center #1

Plant Location : 123 Main Street
City, Zip Code : Anytown, USA

E-SCAN Project : EES40315ES

Thermographer : Michael Nichols, CIT #7583

Notes: Please read the Data log section of this report under "Remarks".

- Some repairs were made by electrician during the survey.
- Emmissivity settings = 1.0 unless otherwise noted.

SECTION 2B RECAP OF FINDINGS

(NR) Not Rated = 1
(M) Minor = 2
(A) Alert = 1
(S) Serious = 1
(C) Critical = 1
TOTAL = 6

KEY to Data Log Abbreviations

OV= Overview(s)
NO=Not Operating
MCR=Motor Control Room
NS=Not Surveyed
MCC= Motor Control Center
LO=Locked Out
TO=Tagged Out

A=Amperage
MTS=Manual Transfer Switch
ATS=Automatic Transfer Switch
OH=Overheating
DNRC=Did not remove cover
CNTR=Contactor
CS=Combination Starter

(US) = Upstairs
(DS) = Downstairs
(F) = Front view
(R) = Rear view
(S) = Side view

ACME Computer Centers

Center #1

Your Town, USA



PROJECT # EES40315ES

AREA	LOCATION	TIME	T #	REMARKS
Tuesday, June 04, 2002	Survey Day Begins	11:45:00 PM		
COMPUTER RM #1/UPS #4	UPS Module #3/Output Bus/Side B	12:25:23 AM		
COMPUTER RM #1/UPS #4				
COMPUTER RM #1/UPS #4	UPS Module #3/Output Bus/Side A	12:34:17 AM		
COMPUTER RM #1/UPS #4				
COMPUTER RM #1/UPS #4	UPS Module #3/Controls/Output Breaker	12:38:47 AM		
COMPUTER RM #1/UPS #4				
COMPUTER RM #1/UPS #4	UPS Module #3/Lead Inverter Cabinet	12:44:13 AM		
COMPUTER RM #1/UPS #4				
COMPUTER RM #1/UPS #4	UPS Module #3/Lag Inverter Cabinet	12:47:03 AM		
COMPUTER RM #1/UPS #4				
COMPUTER RM #1/UPS #4	UPS Module #3/Rectifier Cabinet	12:52:23 AM		
COMPUTER RM #1/UPS #4				
COMPUTER RM #1/UPS #4	UPS Module #3/Input Breaker Cabinet	12:53:56 AM		
COMPUTER RM #1				
COMPUTER RM #1				
COMPUTER RM #1/UPS #1	UPS Module #1/Controls/Input Breaker	12:58:45 AM		
COMPUTER RM #1/UPS #1				
COMPUTER RM #1/UPS #1	UPS Module #1/Lead Inverter Cabinet	13:02:29 AM		
COMPUTER RM #1/UPS #1				
COMPUTER RM #1/UPS #1	UPS Module #1/Lag Inverter Cabinet	13:10:08 AM		
COMPUTER RM #1/UPS #1	UPS Module #1/Lag Inverter Fuse F1	13:10:08 AM	1	See T-Report
COMPUTER RM #1/UPS #1				
COMPUTER RM #1/UPS #1	WYE Rectifier Phase B Input Fuse F2	13:15:32 AM	2	See T-Report
COMPUTER RM #1/UPS #1				
COMPUTER RM #1/UPS #1	WYE Rectifier/Neg Buss to DC Choke	13:38:55 AM	3	See T-Report
COMPUTER RM #1/UPS #1				
COMPUTER RM #1/UPS #1	Input Breaker Cabinet	13:51:42 AM		
COMPUTER RM #1				
COMPUTER RM #1				
COMPUTER RM #1/UPS #3	UPS Module #3/Output Bus/Side B	13:59:40 AM		
COMPUTER RM #1/UPS #3				
COMPUTER RM #1/UPS #3	UPS Module #3/Output Bus/Side A	14:02:20 AM		

THERMOGRAPHIC REPORT



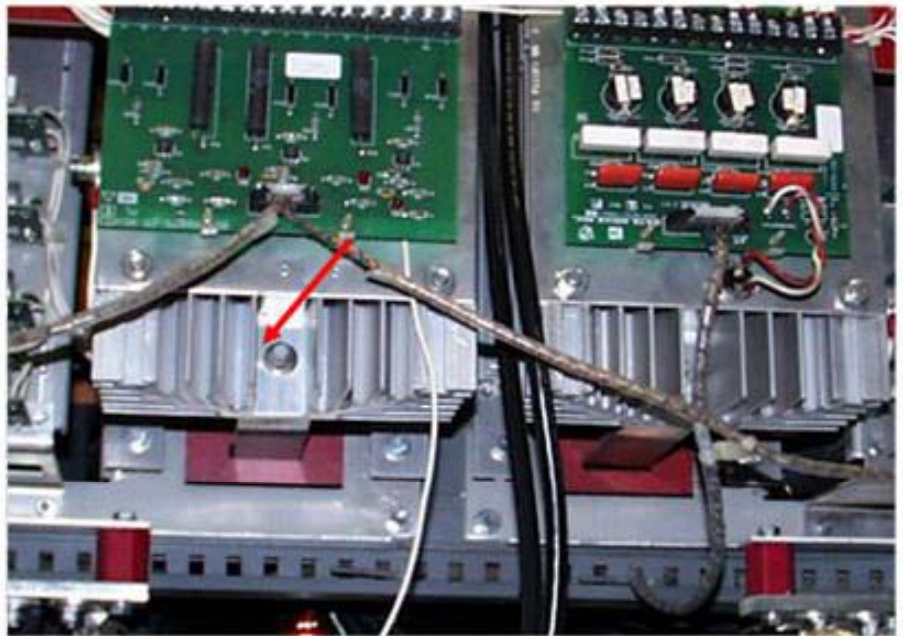
Report No. 1

ACME Computer Centers
Center #1

AREA
UPS ROOM D/MODULE C-10

LOCATION
Panel A-B/Inverter Assembly

Date 6/4/2002
Time 10:02:57



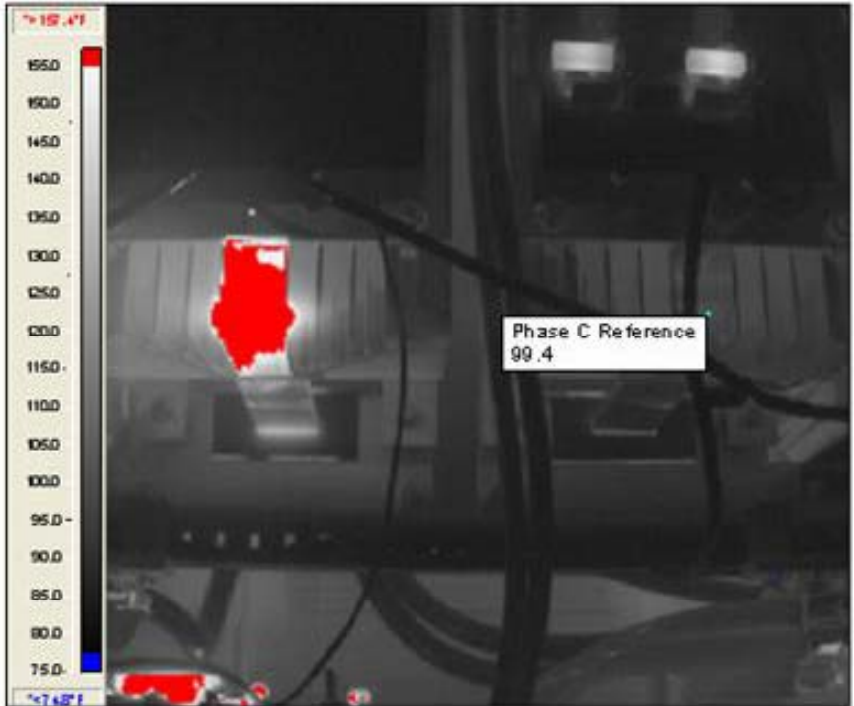
Ambient temp.	78.5
Reference temp.	99.4
High temp.	550.4
Temp. rise	451.0

RISE ABOVE IN DEGREES F

- Ambient
- *** Reference
- *** Adjacent phase
- *** Direct measurement

AMPERAGES

- Phase A: Not Read
- Phase B: Not Read
- Phase C: Not Read



DESCRIPTION

Phase B/Lead Bolt to Main Bus.

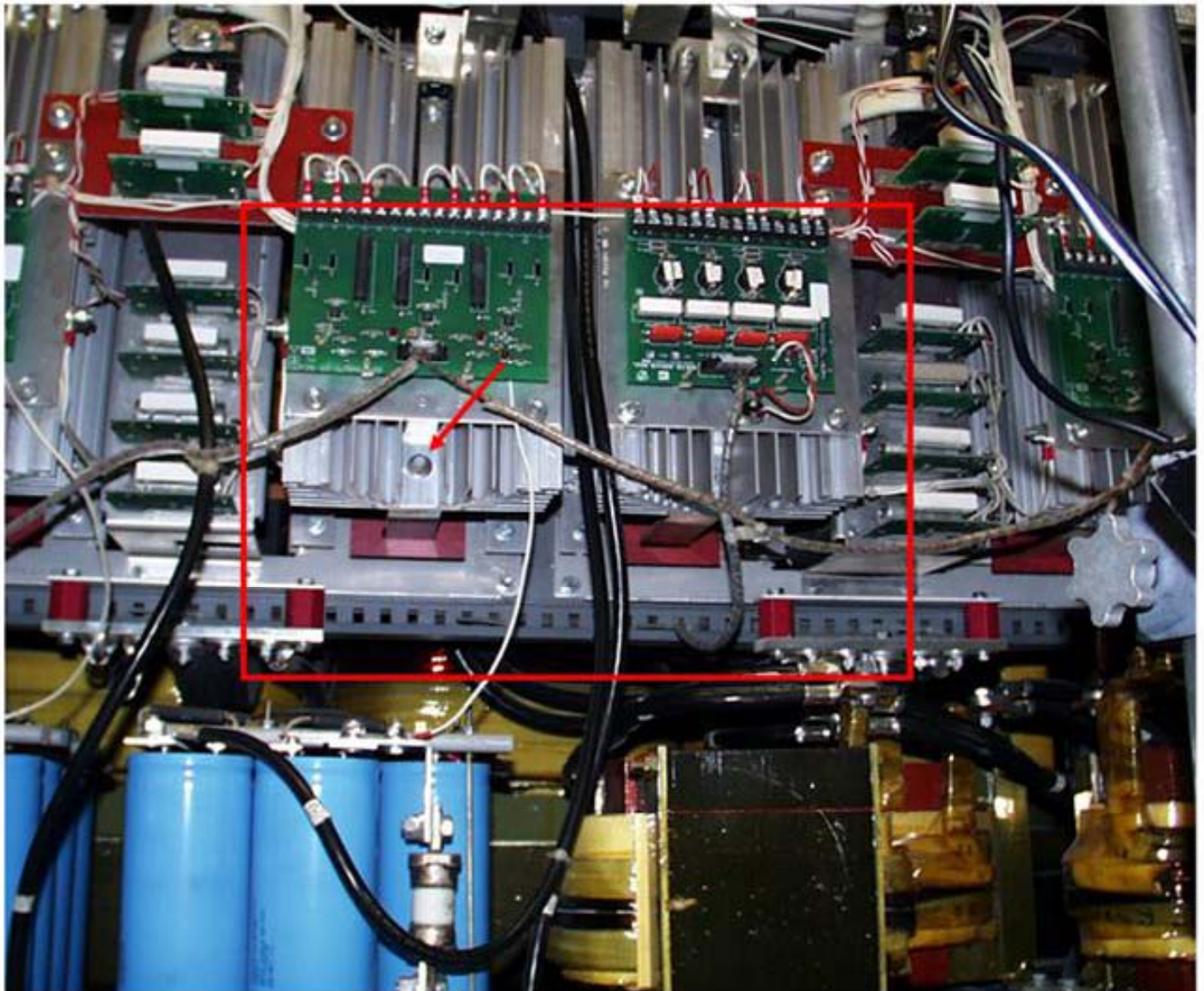
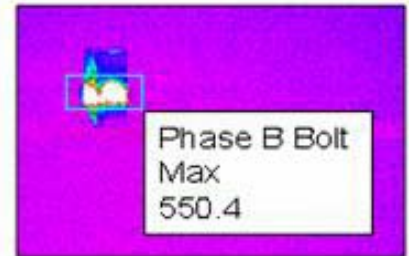
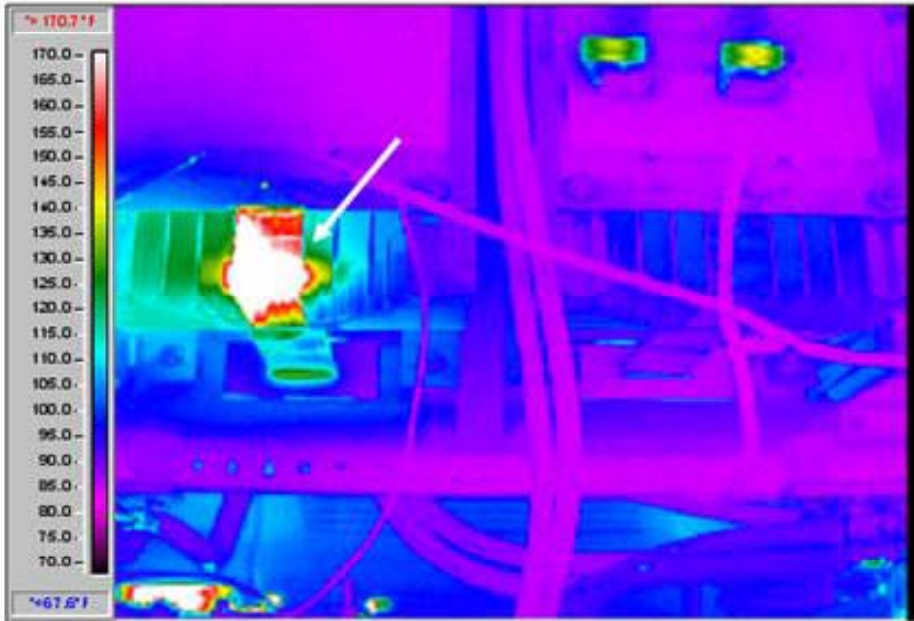
RECOMMENDATION

Replace All Damaged Components.



TEMP. RATING	TEMP. RISE F degrees	CLASSIFICATION
Minor	1-18	Routine. Repair during regular maintenance, little chance of physical damage.
Alert	19-36	Repair within 30 days, watch load and inspect for physical damage.
Serious	37-54	Repair/Replace ASAP. Inspect surrounding components for physical damage.
*** CRITICAL	>55	IMMEDIATE REPAIR/REPLACE. DANGER EXISTS!

QUESTIONS ABOUT THIS REPORT? Call 1-800-248-SCAN



THERMOGRAPHIC REPORT



Report No. 2

ACME Computer Centers
Center #1

AREA
UPS ROOM D/MODULE D-22

LOCATION
Panel A/Main Fuses

Date 6/4/2002
Time 10:02:57

Ambient temp.	77.9
Reference temp.	83.6
High temp.	137.1
Temp. rise	53.5

RISE ABOVE IN DEGREES F

- Ambient
- *** Reference
- *** Adjacent phase
- *** Direct measurement

AMPERAGES

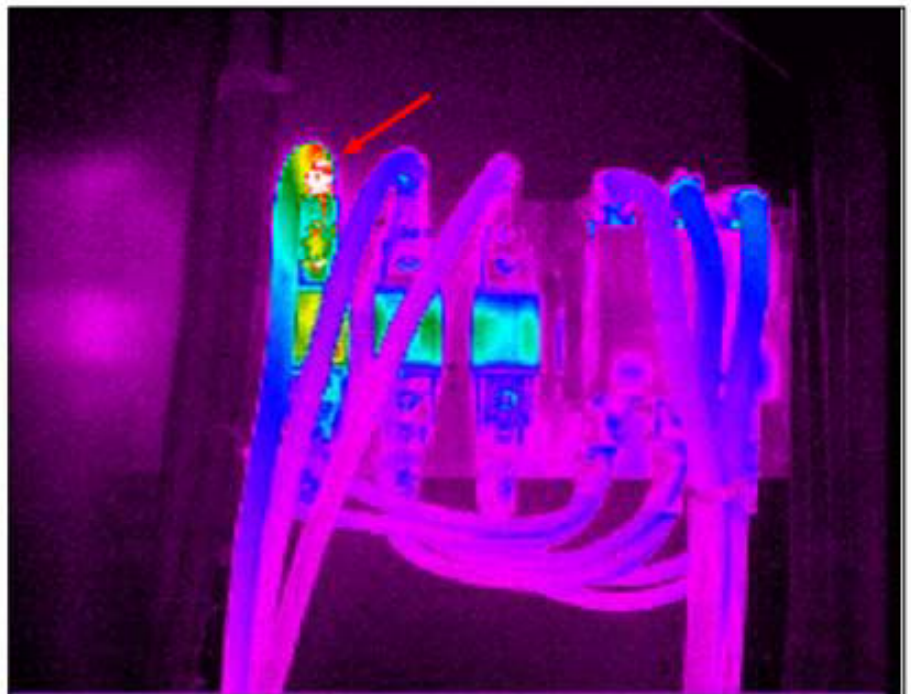
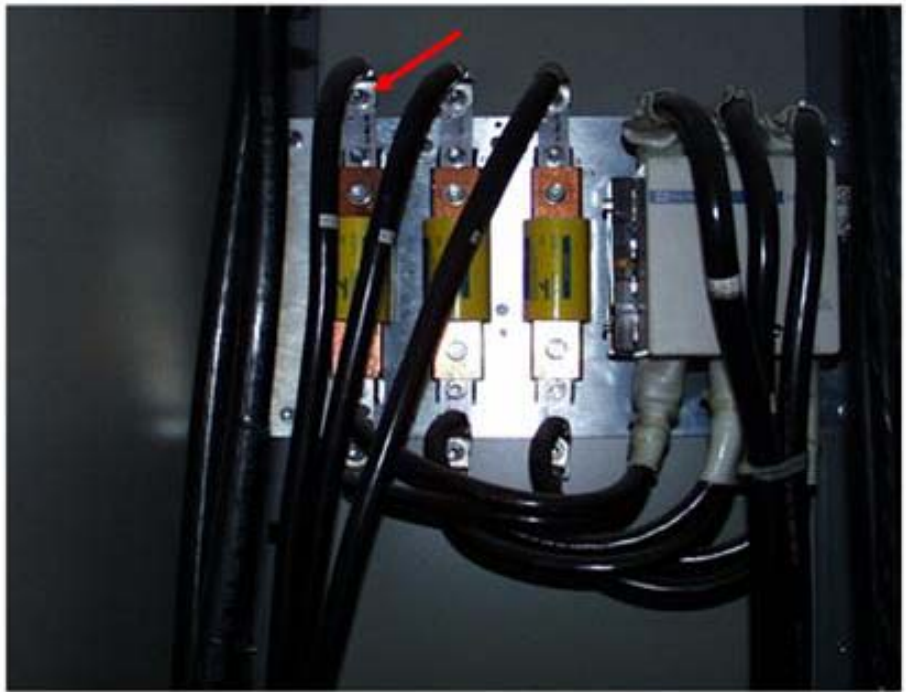
- Phase A: Not Read
- Phase B: Not Read
- Phase C: Not Read

DESCRIPTION

Phase Left/Top Connections.

RECOMMENDATION

Check Connections.



TEMP. RATING	TEMP. RISE F degrees	CLASSIFICATION
Minor	1-18	Routine. Repair during regular maintenance, little chance of physical damage.
Alert	19-36	Repair within 30 days, watch load and inspect for physical damage.
*** Serious	37-54	Repair/Replace ASAP. Inspect surrounding components for physical damage.
CRITICAL	>55	IMMEDIATE REPAIR/REPLACE. DANGER EXISTS!

QUESTIONS ABOUT THIS REPORT?

Call 1-800-248-SCAN

THERMOGRAPHIC REPORT

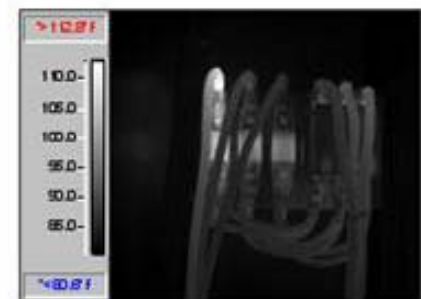
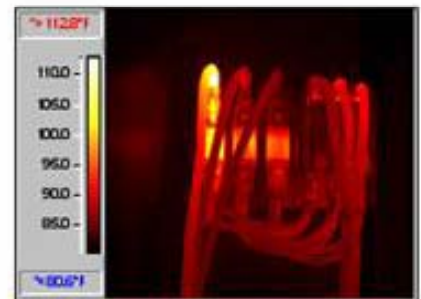
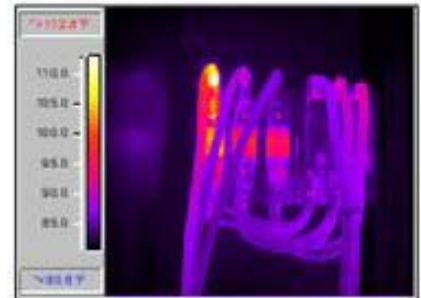
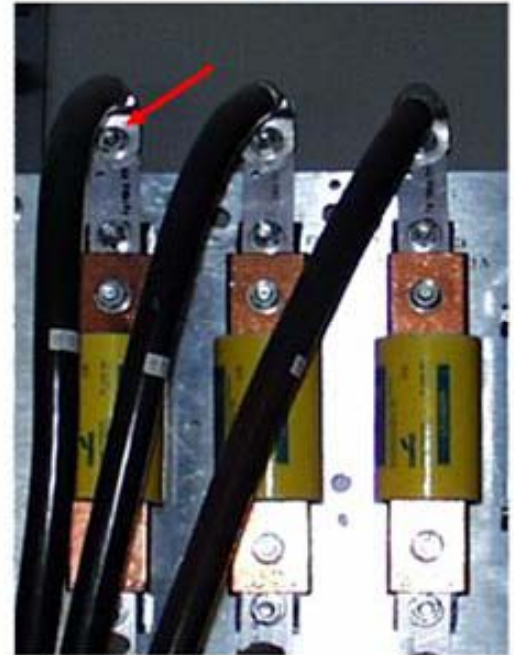
Report No. **2** (CON'T)

ACME
Computer
Centers



Area: UPS ROOM D/MODULE D-22
Loc: Panel A/Main Fuses

ACME Computer Centers
Center #1



THERMOGRAPHIC REPORT



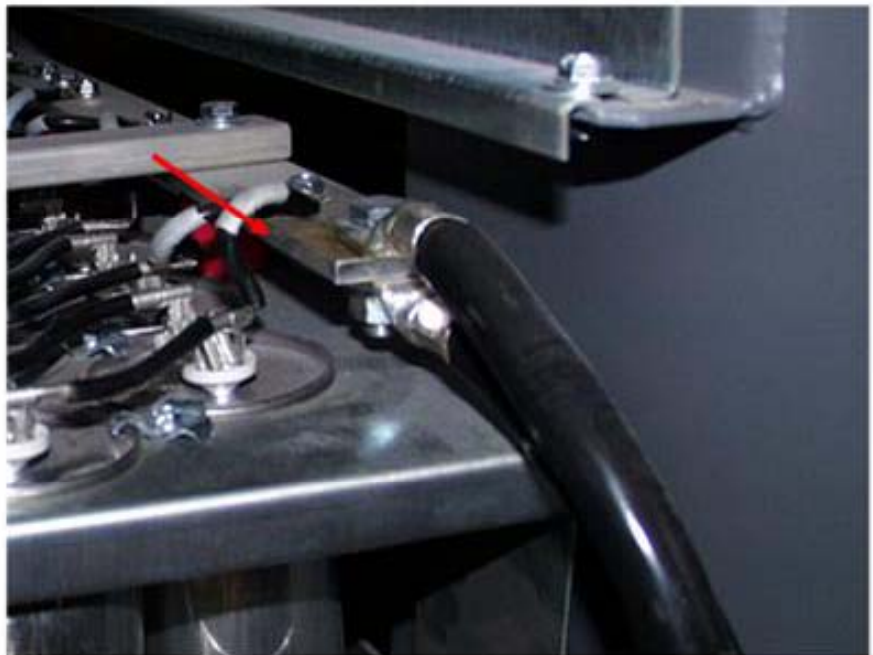
Report No. 3

ACME Computer Centers
Center #1

AREA
UPS ROOM #1/MODULE #45

LOCATION
Panel 3 Output Filter Assembly

Date 6/4/2002
Time 10:02:57



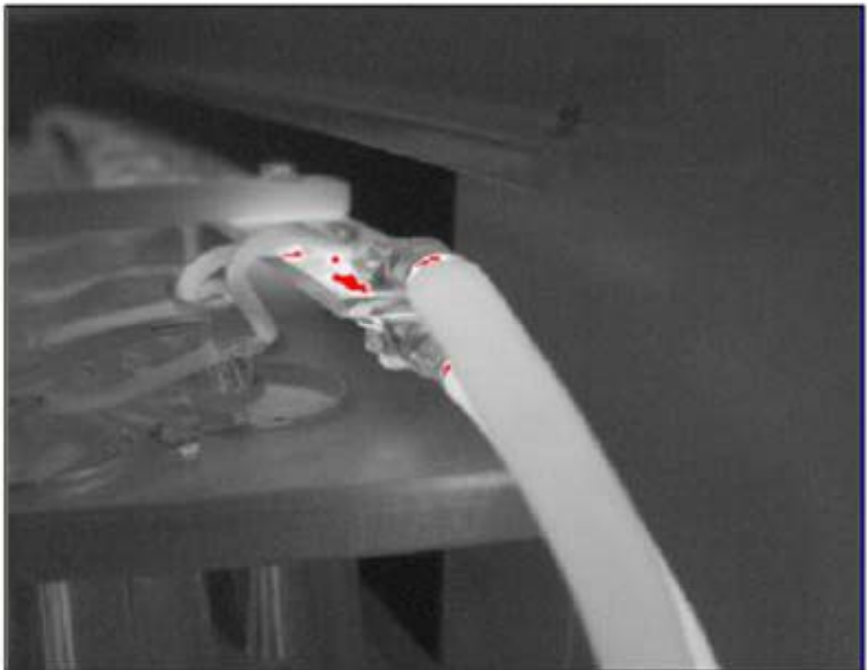
Ambient temp.	75.0
Reference temp.	79.0
High temp.	125.7
Temp. rise	46.7

RISE ABOVE IN DEGREES F

- Ambient
- *** Reference
- *** Adjacent phase
- *** Direct measurement

AMPERAGES

- Phase A: Not Read
- Phase B: Not Read
- Phase C: Not Read



DESCRIPTION

Phase B/Cable Lug Connection.

RECOMMENDATION

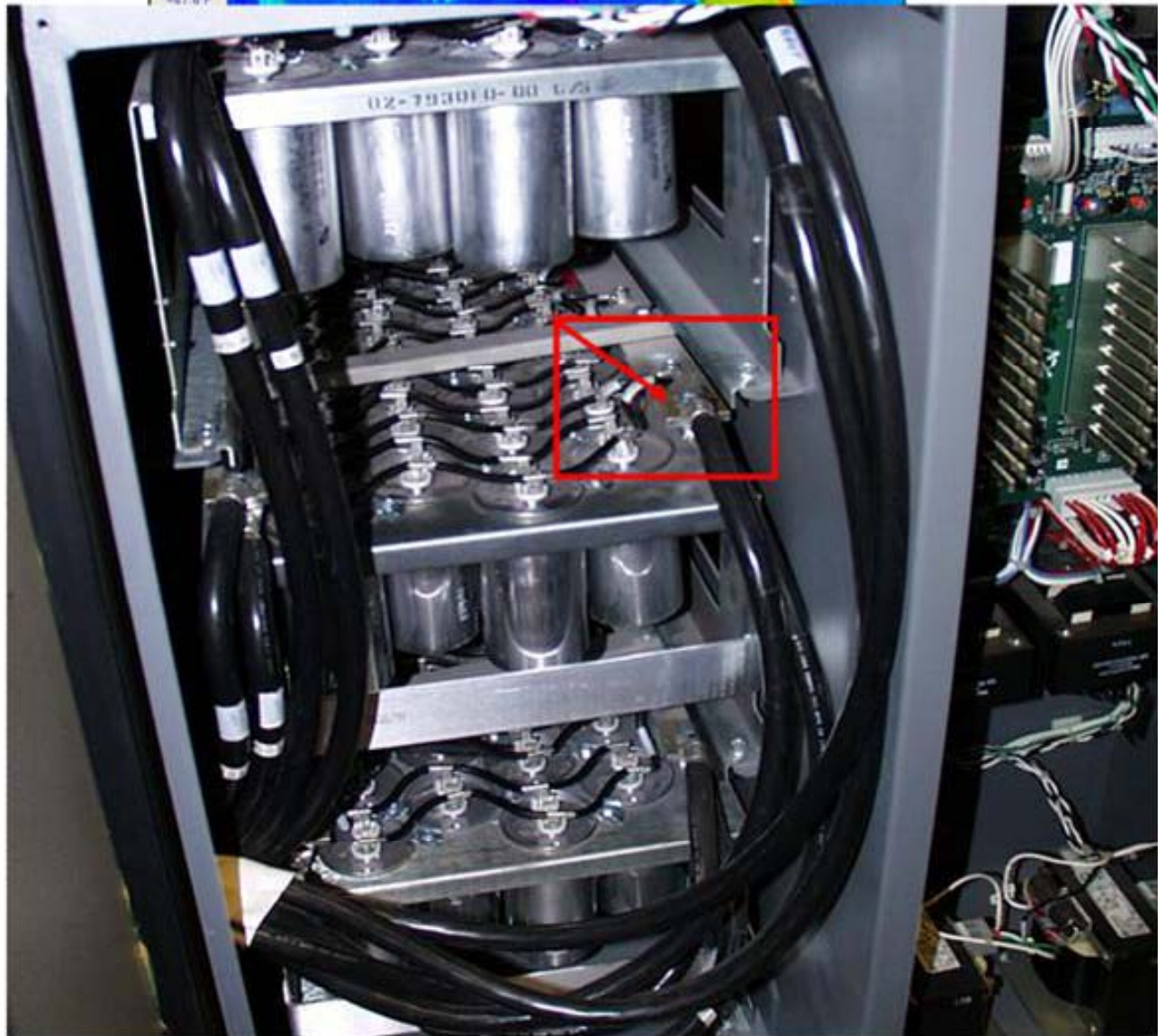
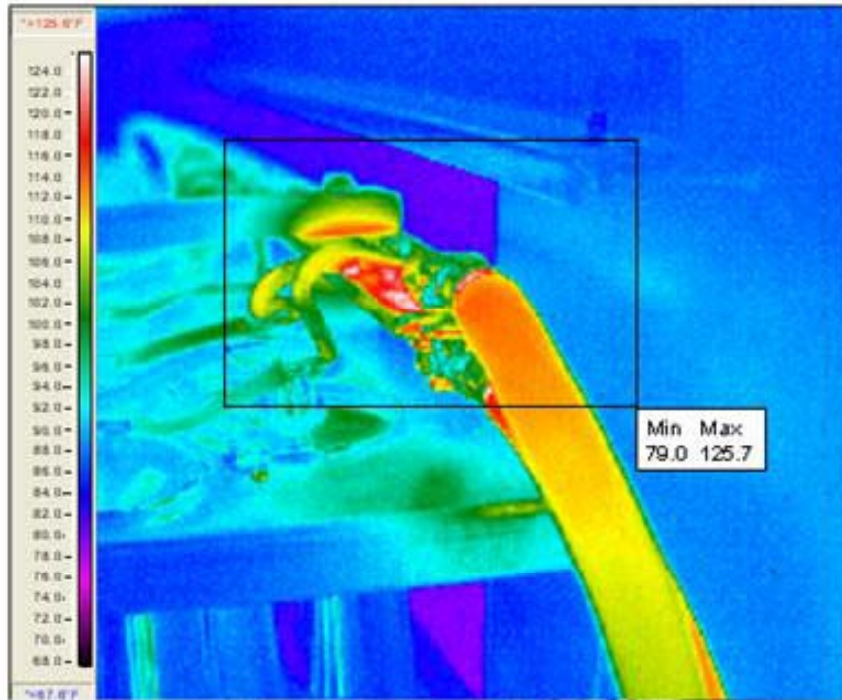
Check Bolted and Crimped Connections.



<u>TEMP. RATING</u>	<u>TEMP. RISE</u> F degrees	<u>CLASSIFICATION</u>
Minor	1-18	Routine. Repair during regular maintenance, little chance of physical damage.
Alert	19-36	Repair within 30 days, watch load and inspect for physical damage.
*** Serious	37-54	Repair/Replace ASAP. Inspect surrounding components for physical damage.
CRITICAL	>55	IMMEDIATE REPAIR/REPLACE. DANGER EXISTS!

QUESTIONS ABOUT THIS REPORT?

Call 1-800-248-SCAN



THERMOGRAPHIC REPORT



Report No. 4

ACME Computer Centers
Center #1

AREA
CHILLER PAD/CHILLER CH-2

LOCATION
Starter Pnl/Contactor #2

Date 6/4/2002
Time 10:02:57

Ambient temp.	95.2
Reference temp.	108.0
High temp.	138.0
Temp. rise	30.0

RISE ABOVE IN DEGREES F

- Ambient
- *** Reference
- *** Adjacent phase
- *** Direct measurement

AMPERAGES

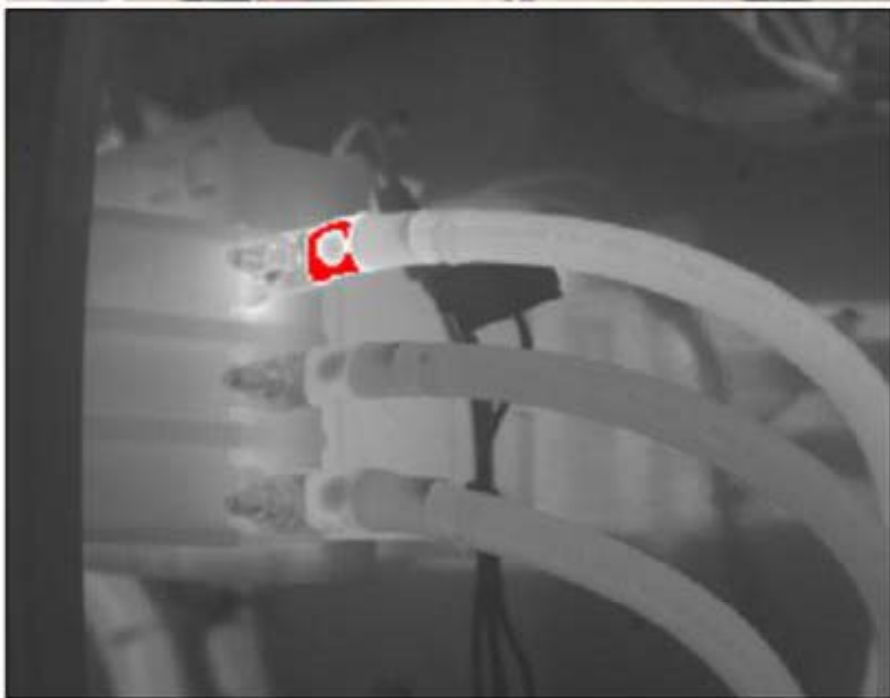
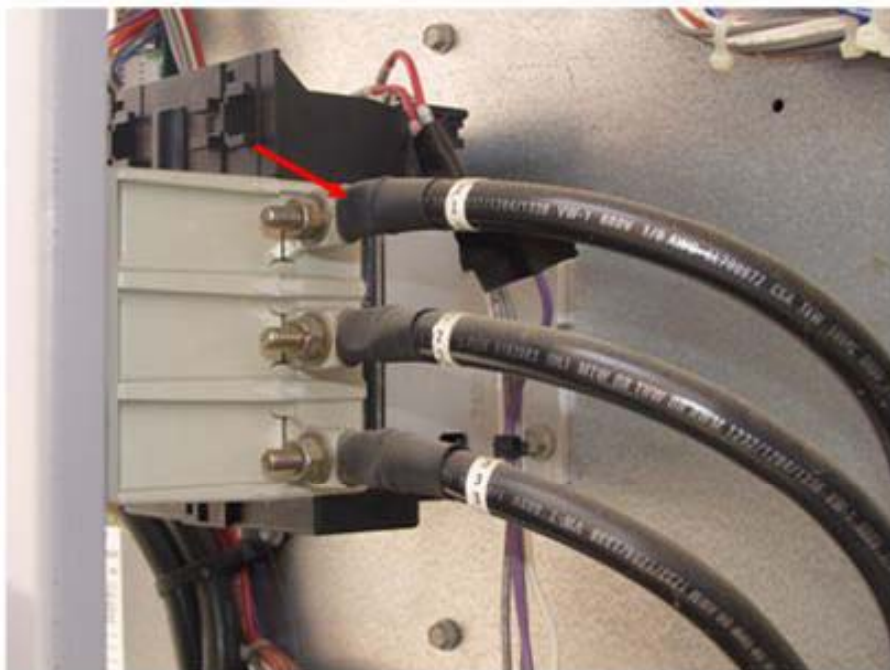
Phase A:	99
Phase B:	96
Phase C:	99

DESCRIPTION

Contactor connector overheating.

RECOMMENDATION

Reinstall wire, check connection.



TEMP. RATING	TEMP. RISE F degrees	CLASSIFICATION
Minor	1-18	Routine. Repair during regular maintenance, little chance of physical damage.
*** Alert	19-36	Repair within 30 days, watch load and inspect for physical damage.
Serious	37-54	Repair/Replace ASAP. Inspect surrounding components for physical damage.
CRITICAL	>55	IMMEDIATE REPAIR/REPLACE. DANGER EXISTS!

QUESTIONS ABOUT THIS REPORT?

Call 1-800-248-SCAN

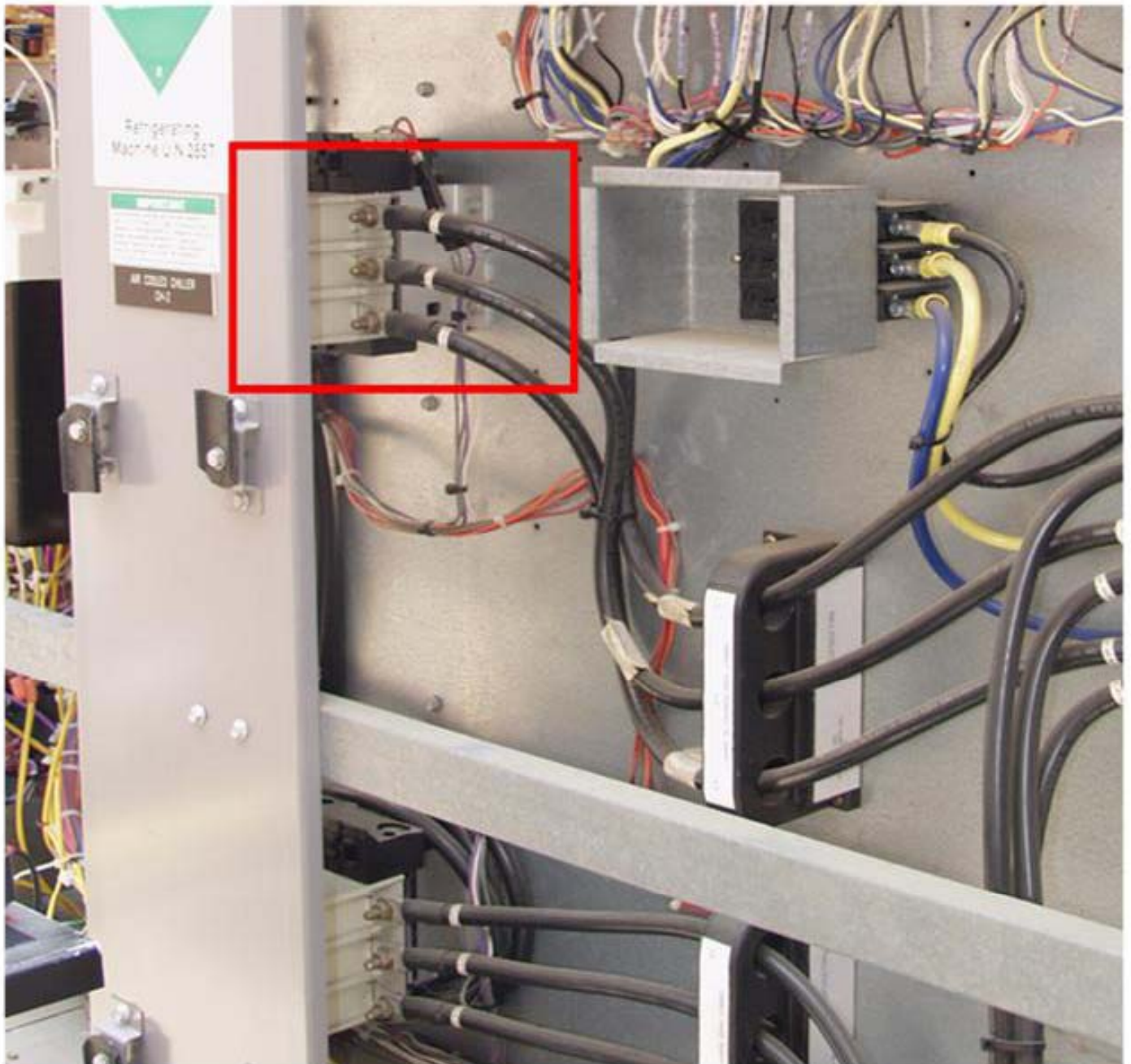
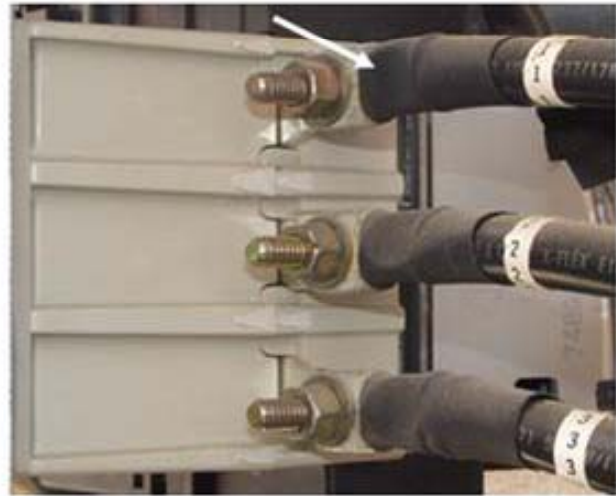
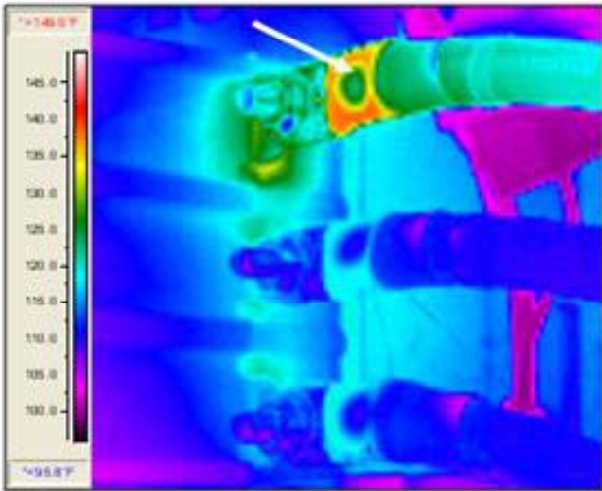
THERMOGRAPHIC REPORT



Area: CHILLER PAD/CHILLER CH-2
Loc: Starter Pnl/Contactor #2

Report No. 4 (CON'T)

ACME Computer Centers
Center #1



THERMOGRAPHIC

REPORT **CompuSCANIR**

Infrared Thermographic Services

Report No.

5

ACME Computer Centers
Center #1

AREA

MAIN SWGR RMMCC-A

LOCATION

Cubicle A1/COMP RM Fan #1

Date 6/4/2002

Time 10:02:57

Ambient temp. 77.7

Reference temp. 104.0

High temp. 156.0

Temp. rise 52.0

RISE ABOVE IN DEGREES F

- Ambient
- *** Reference
- *** Adjacent phase
- *** Direct measurement

AMPERAGES

Phase A: 170

Phase B: 170

Phase C: 170

DESCRIPTION

Breaker lug/phase A, line side.

RECOMMENDATION

Check breaker lug and connections.



<u>TEMP. RATING</u>	<u>TEMP. RISE</u> F degrees	<u>CLASSIFICATION</u>
Minor	1-18	Routine. Repair during regular maintenance, little chance of physical damage.
Alert	19-36	Repair within 30 days, watch load and inspect for physical damage.
*** Serious	37-54	Repair/Replace ASAP. Inspect surrounding components for physical damage.
CRITICAL	>55	IMMEDIATE REPAIR/REPLACE. DANGER EXISTS!

QUESTIONS ABOUT THIS REPORT?

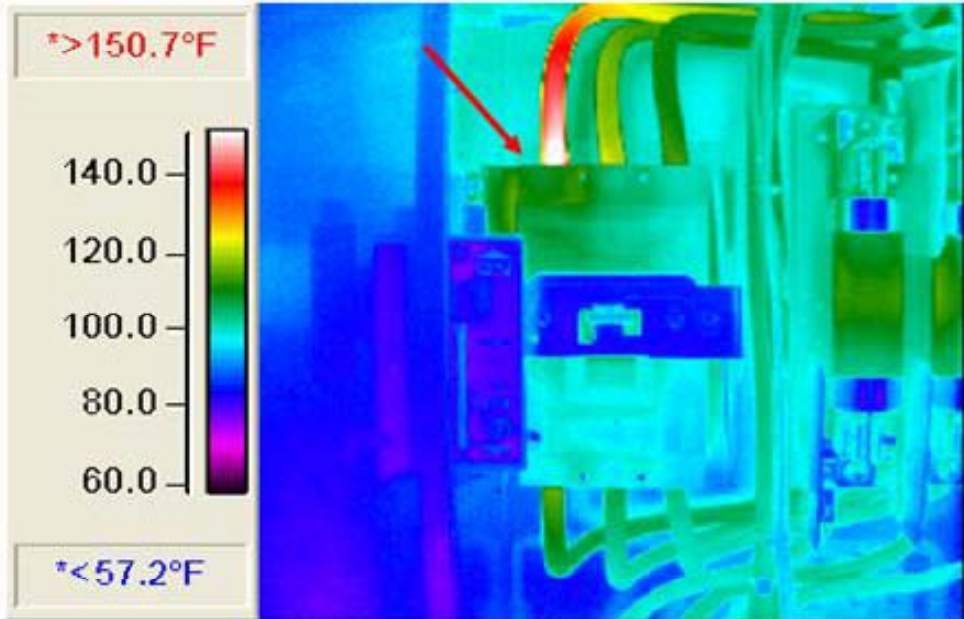
Call 1-800-248-SCAN

THERMOGRAPHIC REPORT

Area: MAIN SWGR RM/MCC-A
Loc: Cubicle A 1/COMP RM Fan #1

Report No. **5** (CON'T)

ACME Computer Centers
Center #1



THERMOGRAPHIC REPORT



Report No. 6

ACME Computer Centers
Center #1

AREA
MAINMCR #3MCC #3-2

LOCATION
Cubicle D2/Pump 3B

Date 6/4/2002
Time 10:02:57

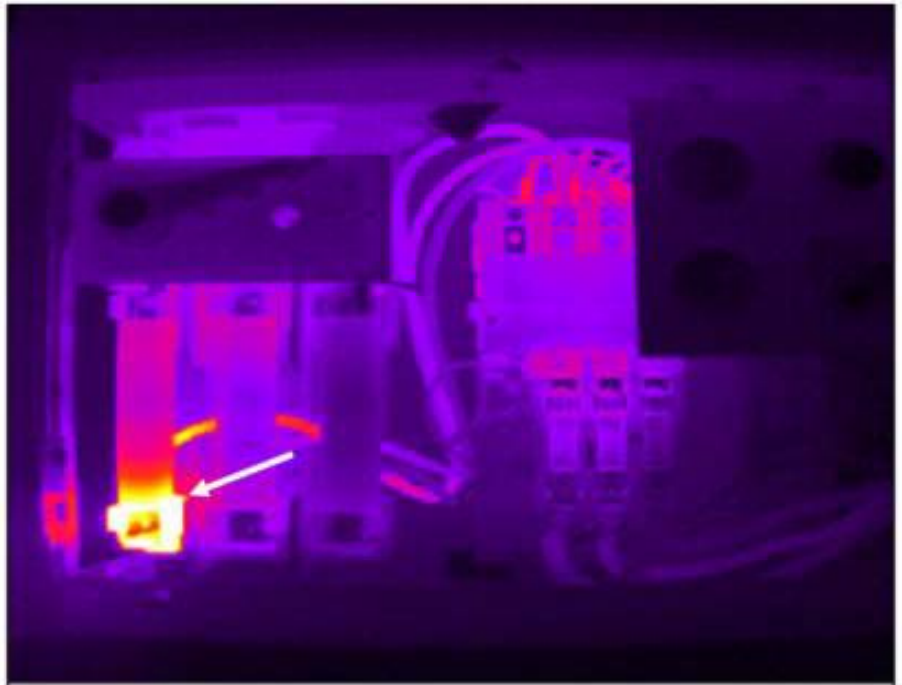


Ambient temp.	86.0
Reference temp.	104.8
High temp.	224.2
Temp. rise	119.4

- RISE ABOVE IN DEGREES F
- Ambient
 - *** Reference
 - *** Adjacent phase
 - *** Direct measurement

AMPERAGES

Phase A:	30
Phase B:	28
Phase C:	29



DESCRIPTION
Fuse and fuse clip/phase A, load side.

RECOMMENDATION
Replace fuse and fuse clip.



TEMP. RATING	TEMP. RISE F degrees	CLASSIFICATION
Minor	1-18	Routine. Repair during regular maintenance, little chance of physical damage.
Alert	19-36	Repair within 30 days, watch load and inspect for physical damage.
Serious	37-54	Repair/Replace ASAP. Inspect surrounding components for physical damage.
*** CRITICAL	>55	IMMEDIATE REPAIR/REPLACE. DANGER EXISTS!

QUESTIONS ABOUT THIS REPORT? Call 1-800-248-SCAN

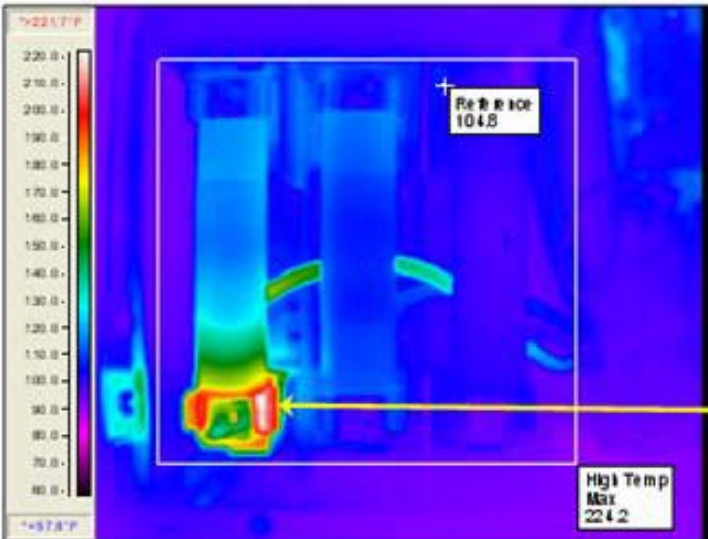
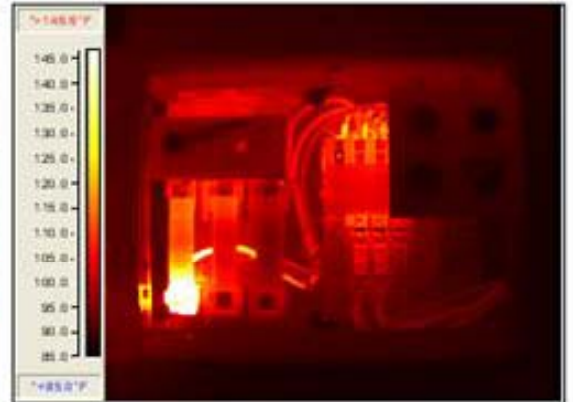
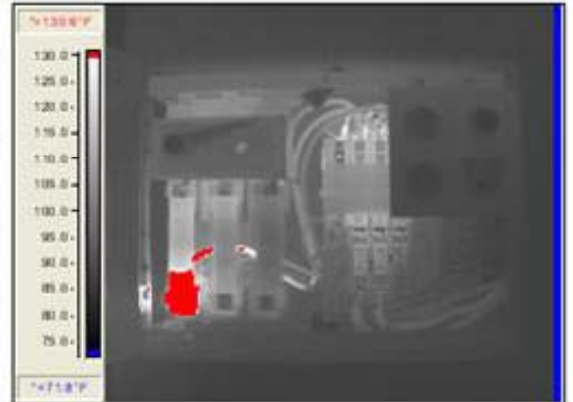
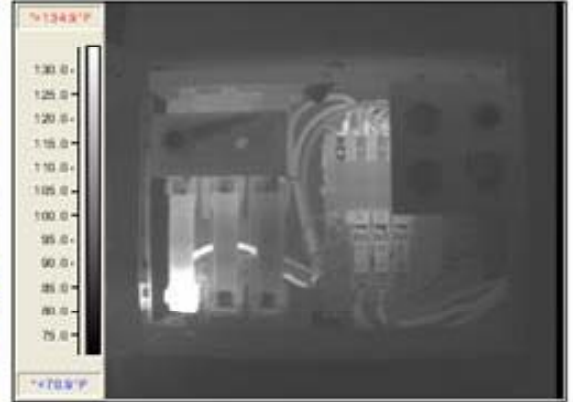
THERMOGRAPHIC REPORT

Report No. **6** (CON'T)



Area: MAINMCR #3MCC #3-2
Loc: Cubicle D2/Pump 3B

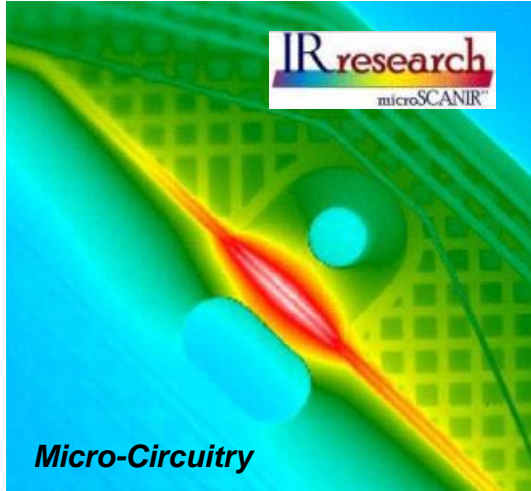
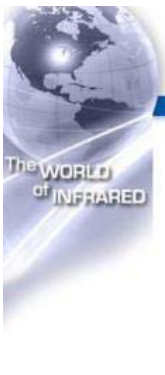
ACME Computer Centers
Center #1



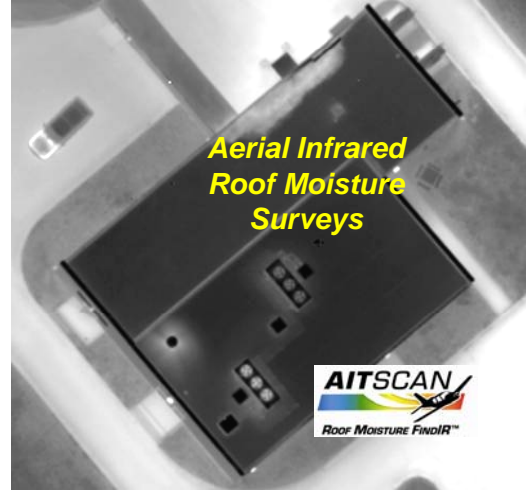
See many more examples on our
web site at:

www.CompuSCANIR.com

CompuSCANIR™
Infrared Thermographic Services



Micro-Circuitry



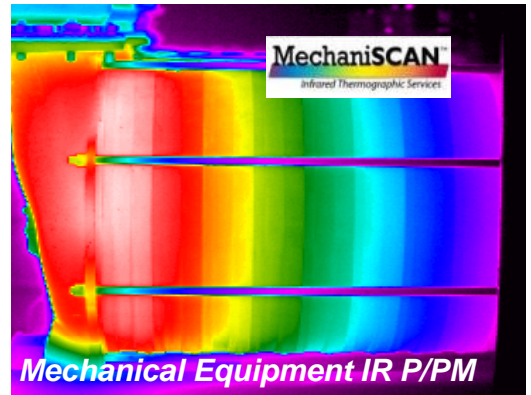
Aerial Infrared Roof Moisture Surveys



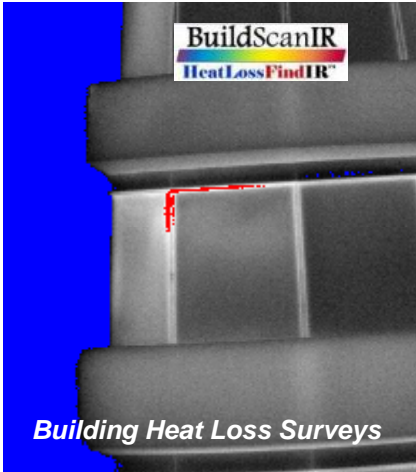
Wide Area Thermal Mapping



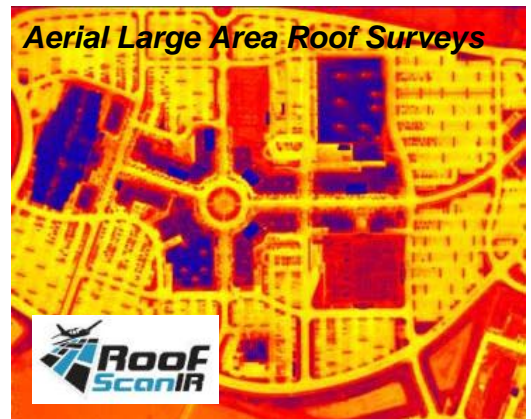
Electrical Equipment IR P/PM



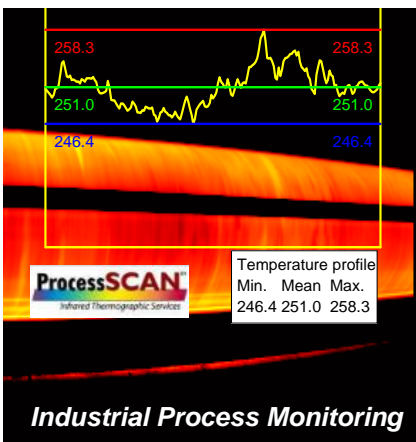
Mechanical Equipment IR P/PM



Building Heat Loss Surveys

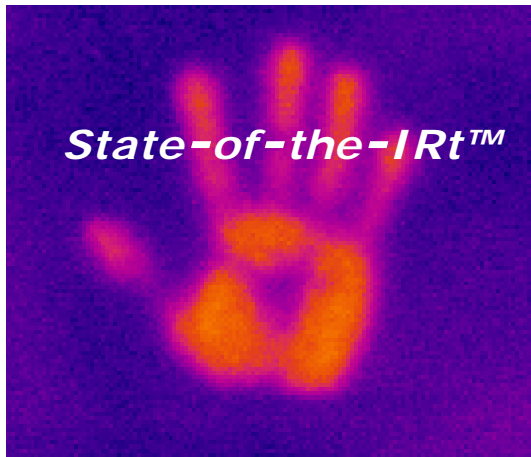


Aerial Large Area Roof Surveys



Temperature profile
Min. Mean Max.
246.4 251.0 258.3

Industrial Process Monitoring



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