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SAMPLE INFRARED REPORT  
BLUEGRASS LAKES PKWY  
CITY, STATE 12345

TAI SERVICES, INC.  
INFRARED INSPECTION

**LOCATION:** SAMPLE INFRARED REPORT  
BLUEGRASS LAKES PKWY  
CITY, STATE 12345

**SURVEY DATE:** AUGUST 9, 2001

**INSPECTED BY:** \_\_\_\_\_

A handwritten signature in black ink, appearing to read "Donald J. White", written over a horizontal line.

DONALD J. WHITE, THERMOGRAPHER

**APPROVED BY:** \_\_\_\_\_

A handwritten signature in black ink, appearing to read "David A. James", written over a horizontal line.

DAVID A. JAMES, THERMOGRAPHER

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## INTRODUCTION

This report is a summary of our findings obtained during a recent TAI Services Infrared inspection of electrical distribution equipment at your facility. Included is a summary of the areas surveyed, photographic documentation and general comments regarding our results. Each problem area is detailed on a separate data sheet describing the equipment, the nature of the problem, and comments regarding corrective action. The action at the bottom of each sheet is used to represent the degree of risk to personnel, equipment, and building operations caused by each potential problem.

Where possible, problems were corrected during the inspection; however, those problems listed for follow-up action are contained in this report. Noted problems were tagged with a sticker as a reminder of the problem location.

All inspections were performed with the electrical systems in the "as found" condition. Each data sheet is accompanied by a control photograph for reference purposes and an infrared photograph (or thermogram) displaying the thermal pattern of the problem area.

Bright areas displayed on the thermogram are representative of higher apparent surface temperatures. Where such temperature rises are considered excessive or unusual, the location is documented as deficient.

The contents of this report are intended to serve as a guide for electrical preventive maintenance in the areas inspected. In order to realize the full benefits of our survey, our recommendations for corrective action should be considered at the earliest possible opportunity. Further, consideration should be given to reinspection of these facilities in one (1) year.

## **SCOPE**

A general thermographic survey of electrical distribution equipment and in some cases wiring located throughout a facility is scanned for thermal signatures of possible problems. Problems or deficiencies which can be detected are corrosion of electrical contacts, over-loaded circuits and bad fuses. The equipment utilized for the infrared scan is the Raytheon PalmIR Pro thermal imaging scanner. A Kodak 240DC digital camera is used for visible light Control photographs which are included in the report for reference. Images of potential problems detected throughout our inspection are displayed on the following pages.

## **INSPECTION COMMENTS**

Our inspection revealed Four (4) deficiencies. None of these deficiencies were considered to be of a serious nature. Any corrective action needed is indicated on the data sheets.

**AREA SURVEYED  
INFRARED INSPECTION**

AUGUST 8, 2001

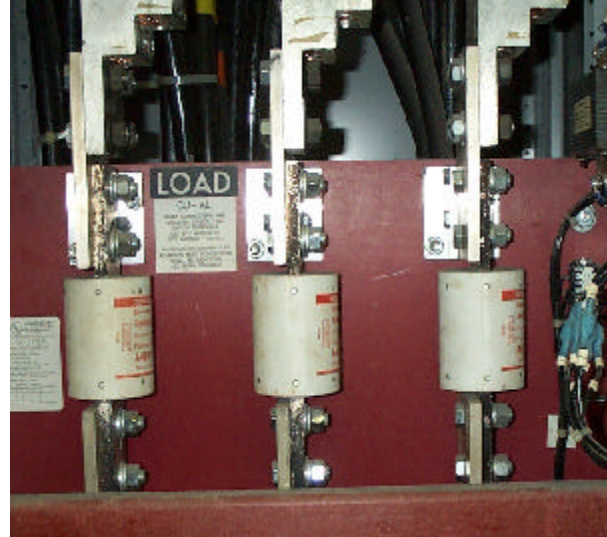
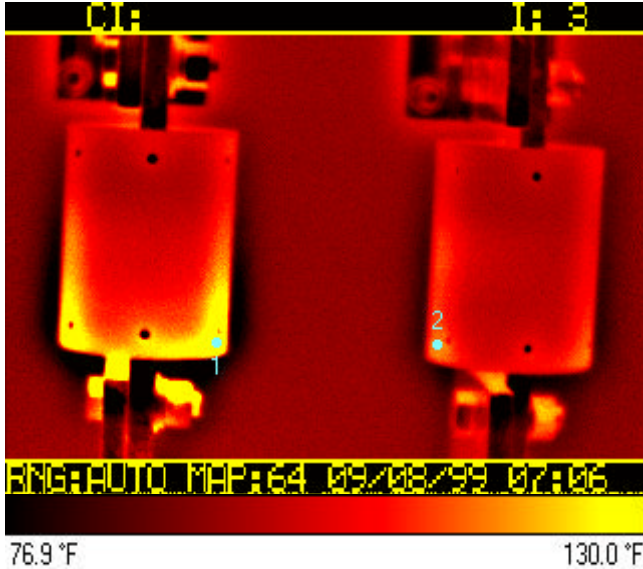
LOCATION: SAMPLE REPORT  
BLUEGRASS PKWY  
CITY, STATE 12345

1. Main Distribution Electrical Room  
(All Panels)
2. Printing Press Areas 1 & 2  
(All Panels)
3. Mezzanine Area  
(All Panels)
4. Packaging Area  
(All Panels)
5. Storage Room, Computer Room  
LPN Panel
6. Phone Room  
LPM Panel
7. Docking Area  
PPO Panel  
LPO Panel
8. Machine Shop  
(All Panels)
9. Roll Storage  
LPH  
LPI  
LPG  
LTGB

## **AREAS SURVEYED (CONT.)**

10. Pre-Make Ready  
LPB  
300 Line Control  
LPPB  
Daetwyer Panel
11. R & D LAB  
(All Panels)
12. Plate Making  
(All Panels)
13. Server Room, Computer (2<sup>nd</sup> Floor)  
(All Panels)
14. Corporate Engineering  
R2B  
H2B
15. Office Switch Gear Room  
(All Panels)
16. Instant Computer Room  
UPS 1 & 1A  
H1A  
R1A
17. On-Line Computer Room  
RIB  
HIB
18. Security Office  
HID  
Unmarked (01)

# THERMOGRAPHIC REPORT 1



|          | Point 1 | Point 2 |
|----------|---------|---------|
| Emiss.   | 0.90    | 0.90    |
| Max /F   | 144.4   | 130.6   |
| Delta /F |         |         |

**LOCATION:** MAIN DISTRIBUTION ROOM

**COMPONENT:** MAIN No. 3 PNL

**LOAD:** AS FOUND

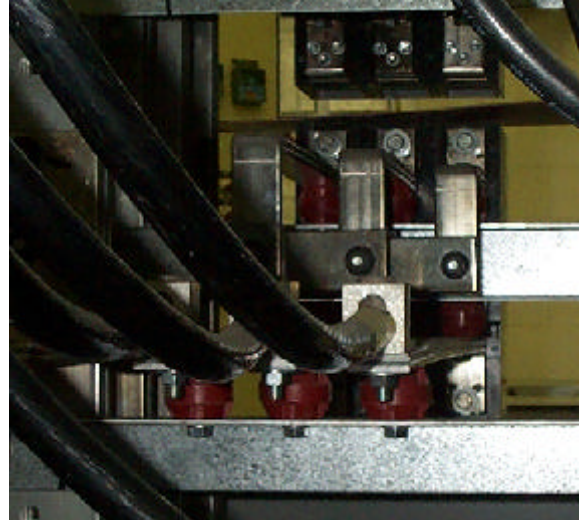
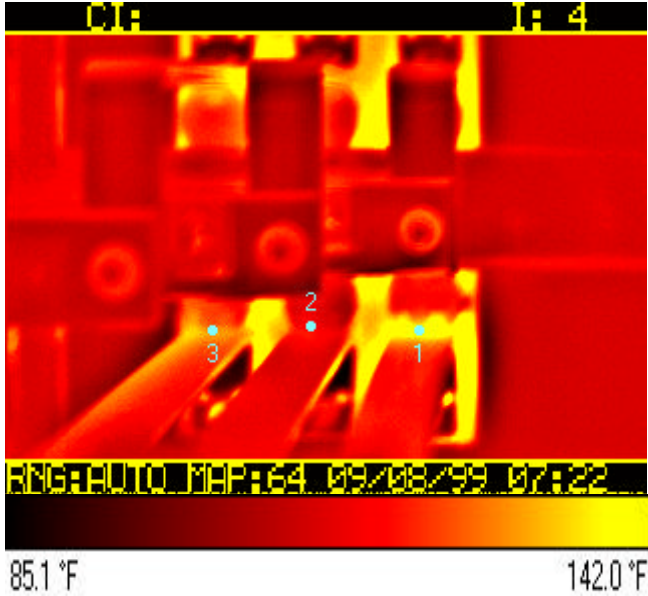
**PHASE:** B, (LINE SIDE)

**TEMPERATURE RISE:** 13.8° OVER PHASE "C",

**PROBLEM:** POSSIBLE WEAK FUSE

**RECOMMENDATION:** INVESTIGATE

# THERMOGRAPHIC REPORT 2



|        | Point1 | Point 2 | Point 3 |
|--------|--------|---------|---------|
| Emiss. | 0.90   | 0.90    | 0.90    |
| Max /F | 157.8  | 130.0   | 143.9   |

**LOCATION:** MAIN DISTRIBUTION ROOM

**COMPONENT:** BREAKER PPI (YELLOW PHASE)

**LOAD:** AS FOUND

**PHASE:** C, LINE SIDE

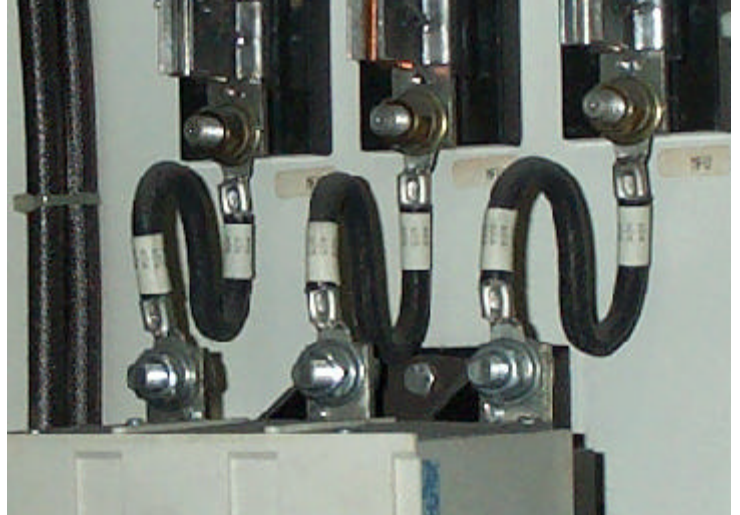
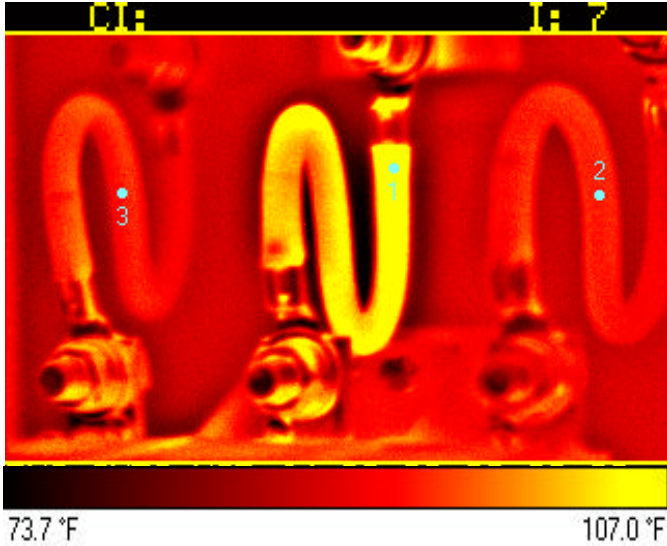
**TEMPERATURE RISE:** 27.8 OVER PHASE "B"

**PROBLEM:** POSSIBLE UNBALANCED CIRCUIT

**RECOMMENDATION:** INVESTIGATE

**SEVERITY:** MODERATE

# THERMOGRAPHIC REPORT 3



|        | Point1 | Point 2 | Point 3 |
|--------|--------|---------|---------|
| Emiss. | 0.90   | 0.90    | 0.90    |
| Max /F | 118.9  | 1104.4  | 104.4   |

**LOCATION:** PRESS 1

**COMPONENT:** LN 1 RELIANCE CAB

**LOAD:** AS FOUND

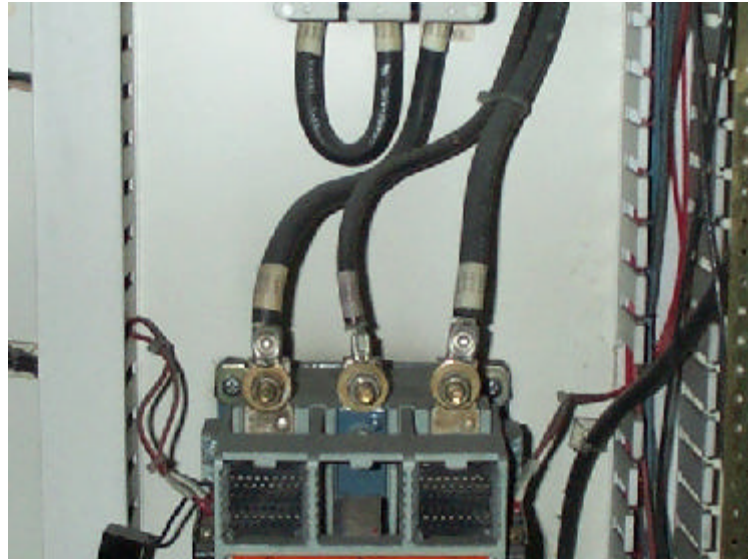
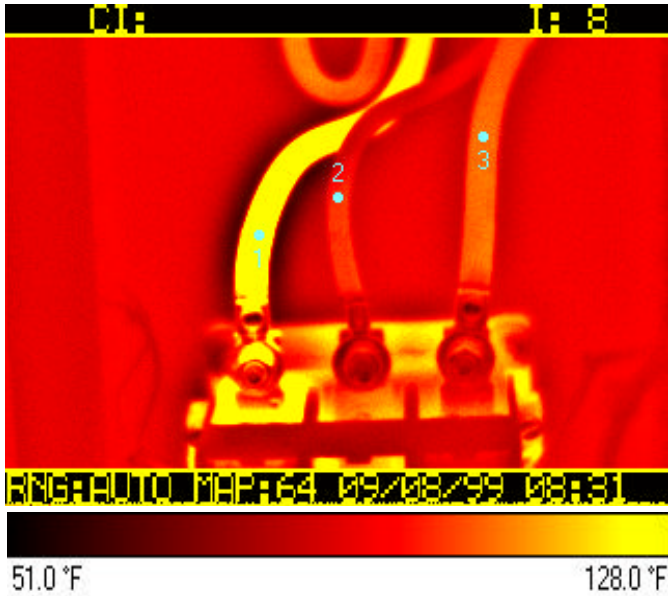
**PHASE:** B, (LINE SIDE)

**TEMPERATURE RISE:** 14.5° OVER PHASES "B" & "C",

**PROBLEM:** POSSIBLE LOOSE LUG AT FUSE.

**RECOMMENDATION:** INVESTIGATE, TIGHTEN

# THERMOGRAPHIC REPORT 4



|        | Point1 | Point 2 | Point 3 |
|--------|--------|---------|---------|
| Emiss. | 0.90   | 0.90    | 0.90    |
| Max /F | 142.2  | 111.44  | 119.4   |

**LOCATION:** PRESS 1

**COMPONENT:** PRM CONTACTOR, (WIRE NO. 1849)

**LOAD:** AS FOUND

**PHASE:** A

**TEMPERATURE RISE:** 30.8° OVER PHASE "B"

**PROBLEM:** POSSIBLE CIRCUIT UNBALANCE

## INFRARED INSPECTION PROCEDURE

Inspections of electrical equipment or service is performed by scanning with a battery powered, hand-held, thermal imager. Heat produced by deteriorating electrical contacts, components or conductors is displayed as varying degrees of brightness. Once a hot spot has been identified with the thermal imager, it is focused and tuned to better isolate the highest temperature zone.

Potential problems identified with the thermal imager are checked with the laser radiometer to measure the component temperature. This temperature is compared to a similar component under the same load conditions, if possible, or to the ambient temperature of the component compartment. If the temperature is found to be excessive, the thermal image is recorded along with the visible light image of the component for reference.

Where possible, a bright sticker is placed next to or on the component in question for future reference and location of the component after the inspection.

Severity of the component or condition is listed as Critical, Serious, Moderate or Advisory. This is based on the temperature rise over a similar component under the same load or if it is felt that the temperature rise warrants further investigation.