



**A-C ELECTRIC**



**Thermography Inspection around**

**Salt lake City, Utah**

**729 South 330 West**

**2/4/2009**

**By**

**Justin May**



#### Inspection Site Information

Customer	A-C Electric
Address	729 South 330 West
Contact person	Justin
Phone number	801-364-1747
E-mail address	<a href="mailto:justin@a-celectricinc.com">justin@a-celectricinc.com</a>
Thermographer	Justin

#### INFORMATION

These pictures have been taken from round the state of Utah. The purpose of this report to show the capabilities, and performance of our new camera in the Flir T250. Using infrared technology is a fast and efficient way to find problem spots before they become a catastrophic event. Having a thermo graphic report done on your facility will prevent downtime, damaged machinery and equipment, and most of all will help provide a safe workplace for your employees. Most insurance providers offer a discount on your insurance premiums to have a service such as this done in your facility on either a semiannual or annual basis. Your company has invested a lot of time and money in to the equipment and services that you offer to your customers. Now is the time to look at some Predictive Maintenance that you can do to decrease down time, broken equipment, and injured employees, in order to keep your facility up and running at its best. But don't just take my word for it; here is a testimonial from another source.

*“Infrared Thermography is the most important and cost effective element of any electrical maintenance program. Research shows an average of 400% return on investment for every dollar spent on infrared inspections. A skilled thermographer who has thorough knowledge of electrical construction can detect electrical failures long before any other testing method reducing down time, saving equipment costs and increasing personnel safety.”* (Certified Infrared)



Thermography Inspection  
at  
Salt Lake City, Utah

Date:  
2/4/2009

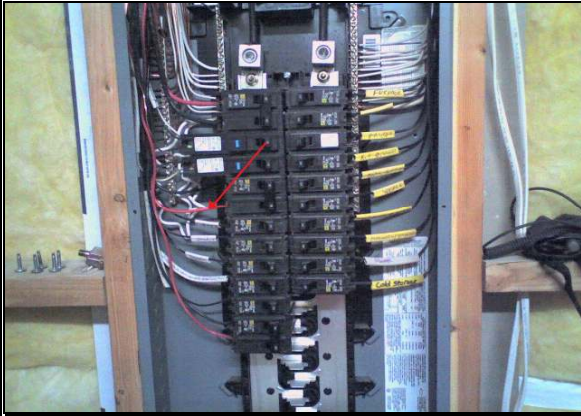
### Summary of Inspection




Thermography Inspection  
at  
(Site)

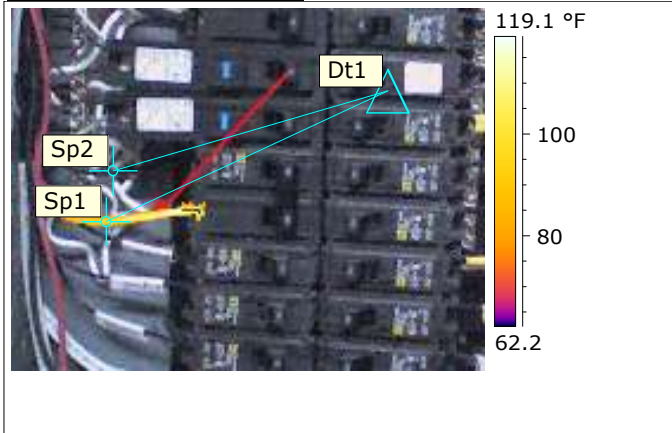
Date:  
(date)

**Photo and Identification**



Location	House Panel
Equipment	Sq. D
Type	Home Line
Nom load	100
Actual load	85
Fault	Loose Wire
Recommendation	Repair & Rescan

**Thermogram 12/31/1999**



Sp1 Temperature	98.7 °F
Sp2 Temperature	66.0 °F
Dt1 Value	32.6

**Analysis & Recommended action:**

Here is a great example of a loose connection in a breaker panel. A loose connection is one of the most common causes of a electrical fire. It is a very simple fix but very difficult to diagnose without the proper tools and equipment.

**Inspected by :**

(Name)

Signature:.....

date: (date)

Repaired by: .....

date:

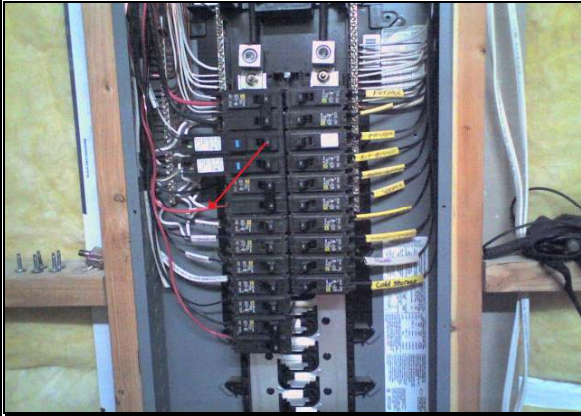
Comment:.....



Thermography Inspection  
at  
(Site)

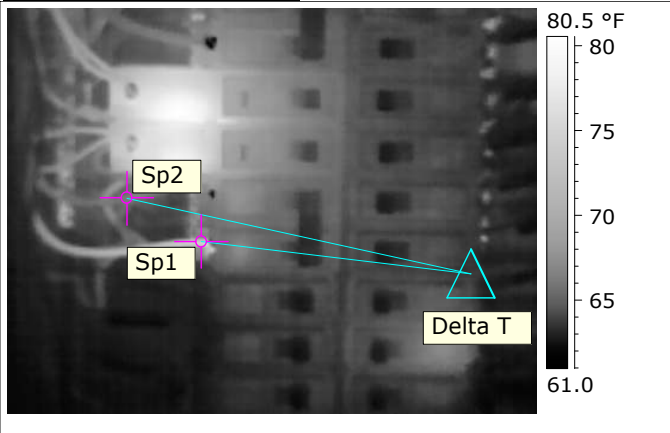
Date:  
(date)

**Photo and Identification**



Location	House Panel
Equipment	Sq. D
Type	Home Line
Nom load	100
Actual load	85
Fault	Lose Wire
Recommendation	Repair & Rescan

**Thermogram 12/31/1999**



Sp1 Temperature	75.1 °F
Sp2 Temperature	66.2 °F
Delta T Value	8.9

**Analysis & Recommended action:**

With the different combinations of color pallets it is easy to find what will work for your facility. In this picture it is easy to see exactly where the problem is. This again is a loose connection on a breaker, this is a very big fire hazard and could cause some very inconvenient down time. This can be easily fixed by a skilled licensed electrician.

**Inspected by :**

(Name)

Signature:.....

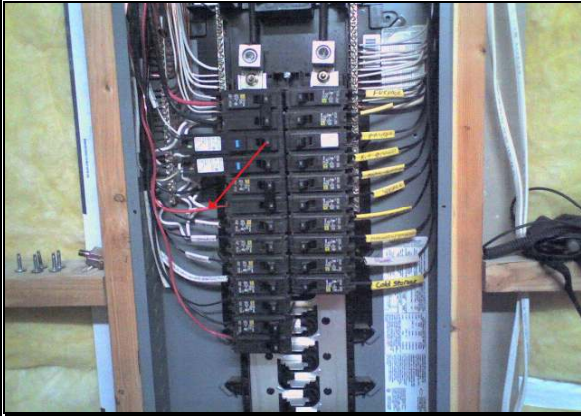
date: (date)

Repaired by: .....

date:

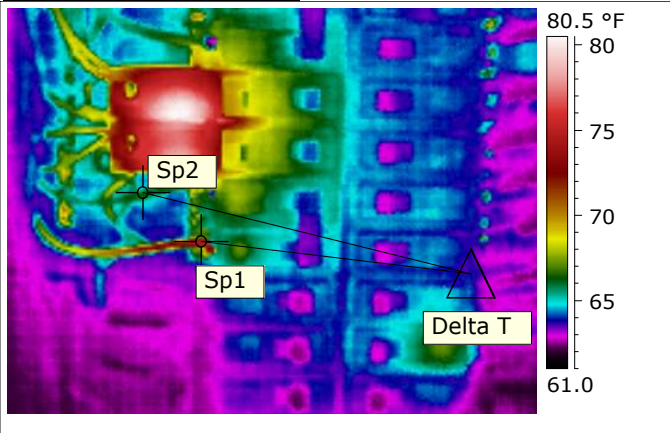
Comment:.....

**Photo and Identification**



Location	House Panel
Equipment	Sq. D
Type	Home Line
Nom load	100
Actual load	85
Fault	Lose Wire
Recommendation	Repair & Rescan

**Thermogram 12/31/1999**



Sp1 Temperature	75.1 °F
Sp2 Temperature	66.5 °F
Delta T Value	8.6

**Analysis & Recommended action:**

With the different combinations of color pallets it is easy to find what will work for your facility. In this picture it is easy to see exactly where the problem is. This again is a loose connection on a breaker, this is a very big fire hazard and could cause some very inconvenient down time. This can be easily fixed by a skilled licensed electrician.

**Inspected by :**

(Name)

Signature:.....

date: (date)

Repaired by: .....

date:

Comment:.....



Thermography Inspection  
at  
(Site)

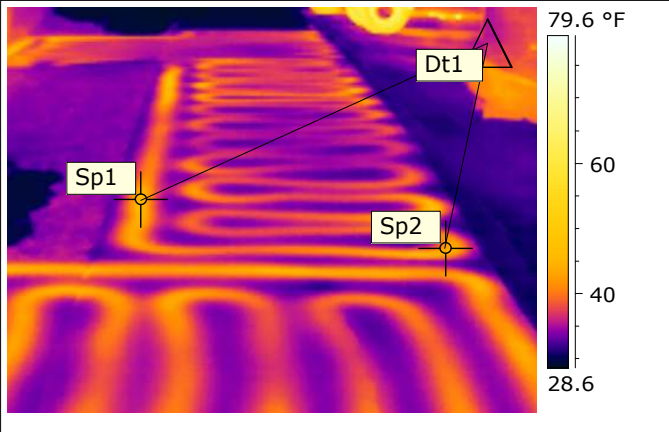
Date:  
(date)

**Photo and Identification**



Location	SLC
Equipment	Heat Trace
Type	?
Nom load	30
Actual load	23
Fault	None
Recommendation	N/A

**Thermogram 1/22/2009**



<b>Sp1.Temperature 45.4 °F</b>
Sp2.Temperature 44.4 °F
Dt1 1.0

**Analysis & Recommended action:**

In this picture, it is very clear and easy to see the underground heat trace, that is used to keep the snow and ice off the sidewalks for the convenience of the customers entering the building. With the use of thermal imaging it is fast and easy to spot problems that could occur with the system. And if there was a problem, it would be easy to pinpoint his location to make the repair quick, easy and cheaper than ripping out the entire sidewalk.

**Inspected by :**

(Name)

Signature:.....

date: (date)

Repaired by: .....

date:

Comment:.....

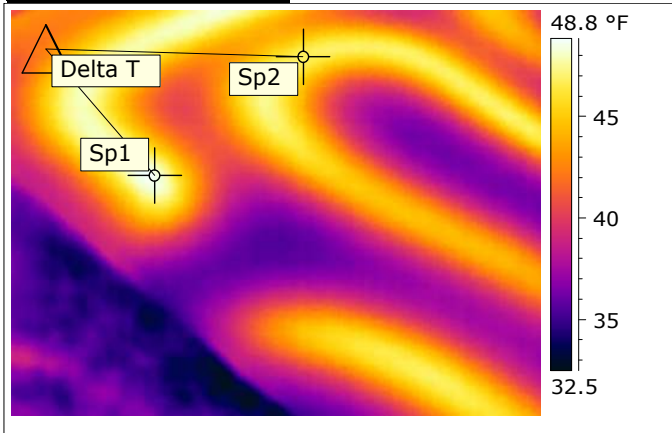


**Photo and Identification**



Location	SLC
Equipment	Heat Trace
Type	?
Nom load	30
Actual load	23
Fault	None
Recommendation	N/A

**Thermogram 1/22/2009**



Sp1 Temperature	48.5 °F
Sp2 Temperature	46.9 °F
Delta T Value	1.7

**Analysis & Recommended action:**

Here you can see where the heat trace enters the sidewalk from the control cabinet mounted on the wall.

**Inspected by :**

(Name)

Signature:.....

date: (date)

Repaired by: .....

date:

Comment:.....

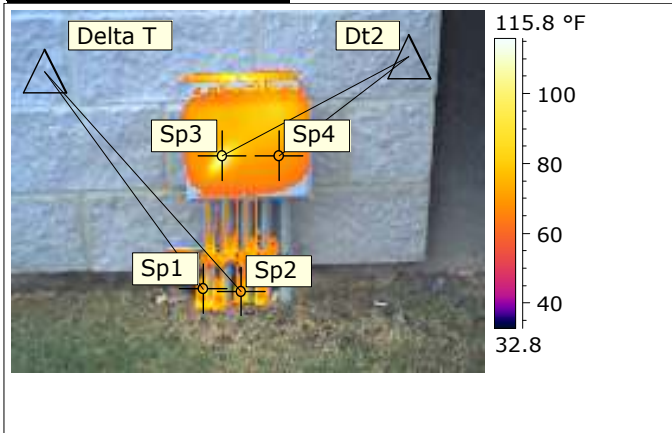


**Photo and Identification**



Location	SLC
Equipment	Heat Trace
Type	?
Nom load	30
Actual load	23
Fault	None
Recommendation	N/A

**Thermogram 1/22/2009**



Sp1 Temperature	75.3 °F
Sp2 Temperature	73.1 °F
Sp3 Temperature	112.7 °F
Sp4 Temperature	70.6 °F
Delta T Value	2.2
Dt2 Value	42.0

**Analysis & Recommended action:**

Here is the heat trace cabinet mounted on the exterior wall of the building. You can see on the cover the box that there is a hotspot inside. By further examination, we found that this is where one connection was little closer to the exterior of the box than the others.

**Inspected by :**

(Name)

Signature:.....

date: (date)

Repaired by: .....

date:

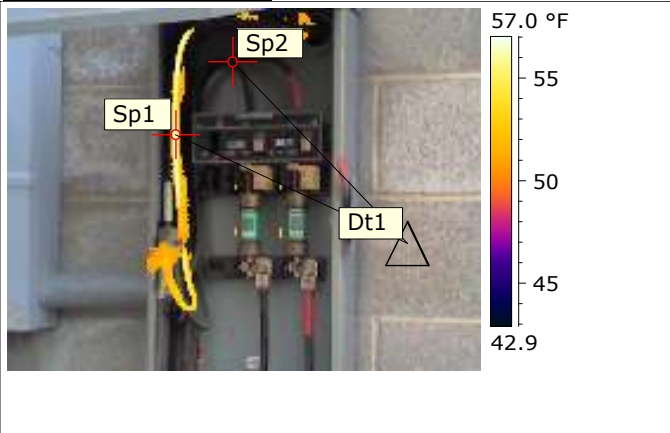
Comment:.....

**Photo and Identification**



Location	SLC
Equipment	GE Disconnect
Type	200 A 240 V
Nom load	200
Actual load	145
Fault	Loose Connection
Recommendation	Repair & Rescan

**Thermogram 3/2/2009**



Sp1 Temperature	56.8 °F
Sp2 Temperature	49.6 °F
Dt1 Value	7.1

**Analysis & Recommended action:**

This picture clearly shows that there is a hot wire inside this disconnect. With the use of our FLIR T250 infrared camera this problem was quickly detected and fixed. Without this technology this problem could have existed for years and could have ended in a catastrophic failure.

**Inspected by :**

(Name)

Signature:.....

date: (date)

Repaired by: .....

date:

Comment:.....



Thermography Inspection  
at  
(Site)

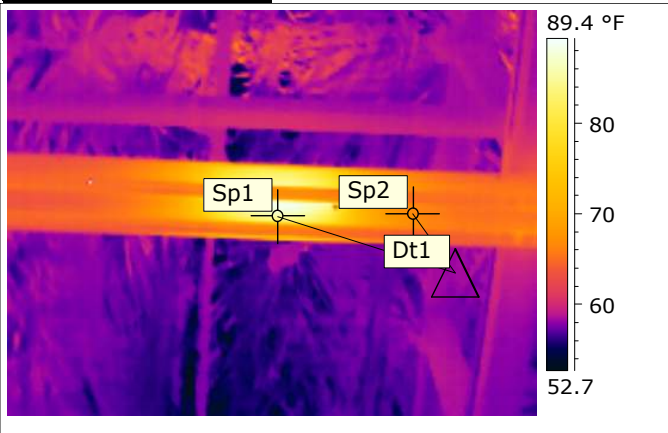
Date:  
(date)

**Photo and Identification**



Location	SLC
Equipment	8' Strip Light
Type	?
Nom load	?
Actual load	?
Fault	Hot Ballast
Recommendation	Check, and replace if necessary.

**Thermogram 3/2/2009**



Sp1 Temperature	85.1 °F
Sp2 Temperature	66.4 °F
Dt1 Value	18.7

**Analysis & Recommended action:**

In this picture, you can see the heat of the ballast is putting off. Ballasts do put off a lot of heat, but this is a little excessive and should be checked to make sure that everything is okay.

**Inspected by :**

(Name)

Signature:.....

date: (date)

Repaired by: .....

date:

Comment:.....



Thermography Inspection  
at  
(Site)

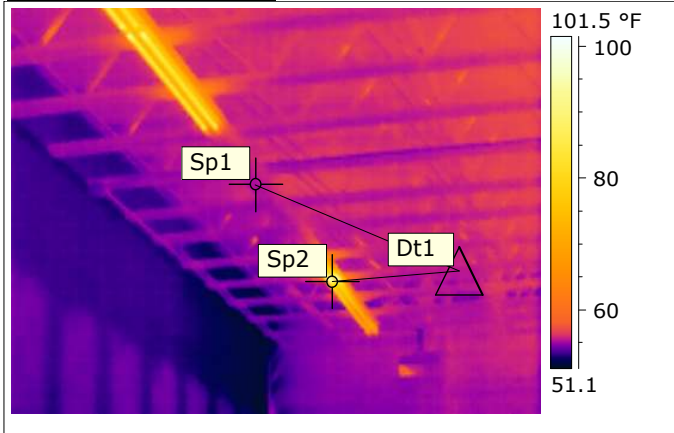
Date:  
(date)

**Photo and Identification**



Location	SLC
Equipment	8' Strip Fixture
Type	?
Nom load	?
Actual load	?
Fault	Bad Ballast
Recommendation	Repair

**Thermogram 3/2/2009**



Sp1 Temperature	55.3 °F
Sp2 Temperature	83.8 °F
Dt1 Value	-28.5

**Analysis & Recommended action:**

In this picture is easy to tell what the ballast is no longer working. If the ballast was working there would be a heat signature from it. So in this case, the lamps are most likely burnt out. This can be a very useful tool in areas that are hard to access.

**Inspected by :**

(Name)

Signature:.....

date: (date)

Repaired by: .....

date:

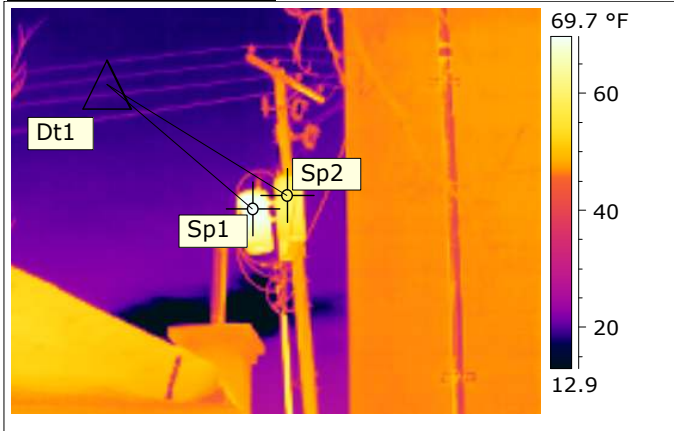
Comment:.....

**Photo and Identification**



Location	SLC
Equipment	Transformer
Type	?
Nom load	?
Actual load	?
Fault	None
Recommendation	N/A

**Thermogram 3/2/2009**



Sp1 Temperature	69.5 °F
Sp2 Temperature	60.0 °F
Dt1 Value	9.5

**Analysis & Recommended action:**

In this pitcher, you can tell the transformer on the left is working a little harder or maybe a little low on oil.

**Inspected by :**

(Name)

Signature:.....

date: (date)

Repaired by: .....

date:

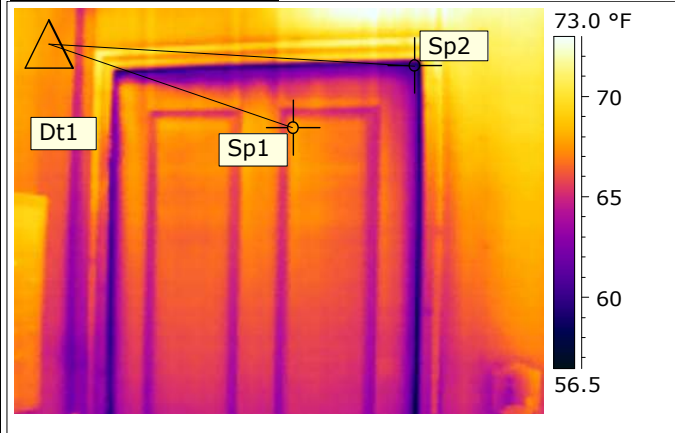
Comment:.....

**Photo and Identification**



Location	SLC
Equipment	None
Type	
Nom load	
Actual load	
Fault	None
Recommendation	N/A

**Thermogram 3/2/2009**



Sp1 Temperature	68.0 °F
Sp2 Temperature	59.1 °F
Dt1 Value	8.9

**Analysis & Recommended action:**

In this picture, you can see this door is improperly sealed. You can see the cool air from the outside to leaking into the warm room. This is a very easy fix with a little bit of sealing tape.

**Inspected by :**

(Name)

Signature:.....

date: (date)

Repaired by: .....

date:

Comment:.....

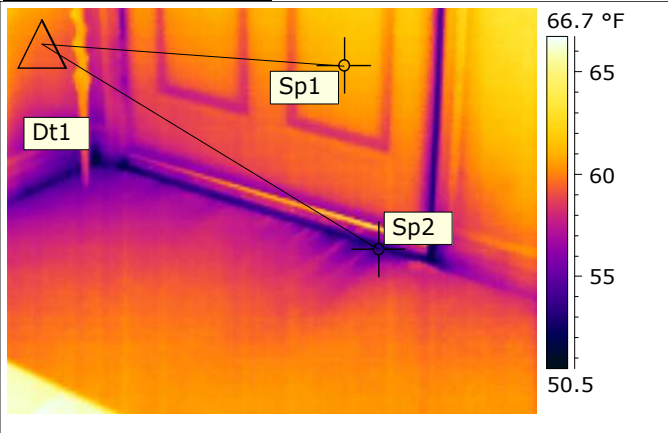


**Photo and Identification**



Location	SLC
Equipment	
Type	
Nom load	
Actual load	
Fault	None
Recommendation	N/A

**Thermogram 3/2/2009**



Sp1 Temperature	61.0 °F
Sp2 Temperature	54.3 °F
Dt1 Value	6.8

**Analysis & Recommended action:**

This is another picture of the cool air from the outside entering the warm room. You can see the cool streaks that are formed on the floor from the cool air.

**Inspected by :**

(Name)

Signature:.....

date: (date)

Repaired by: .....

date:

Comment:.....





Thermography Inspection  
at  
(Site)

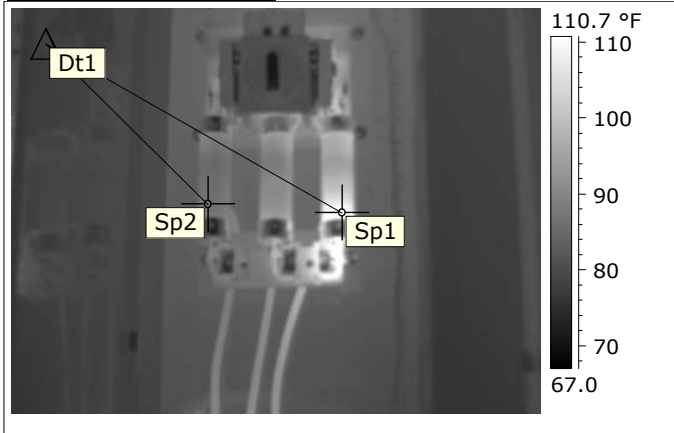
Date:  
(date)

**Photo and Identification**



Location	SLC
Equipment	Fused Disconnect
Type	3ph, 600 V
Nom load	
Actual load	
Fault	Loose Fuse Clip
Recommendation	Repair & Rescan

**Thermogram 5/6/2002**



Sp1 Temperature	117.4 °F
Sp2 Temperature	87.0 °F
Dt1 Value	30.3

**Analysis & Recommended action:**

Here is a great example of fused disconnect that is experiencing a loose connection on one of the fuse clips. This can cause premature fuse failure or even a fire. Through the use of thermal technology. We are able to quickly diagnose a problem and figure out the best solution to fix the problem. This problem is easily fixed by a qualified electrician.

**Inspected by :**

(Name)

Signature:.....

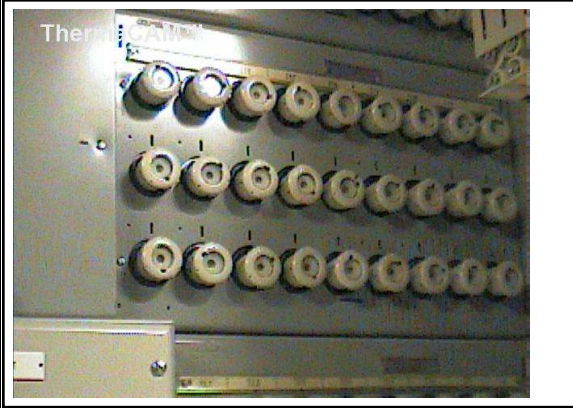
date: (date)

Repaired by: .....

date:

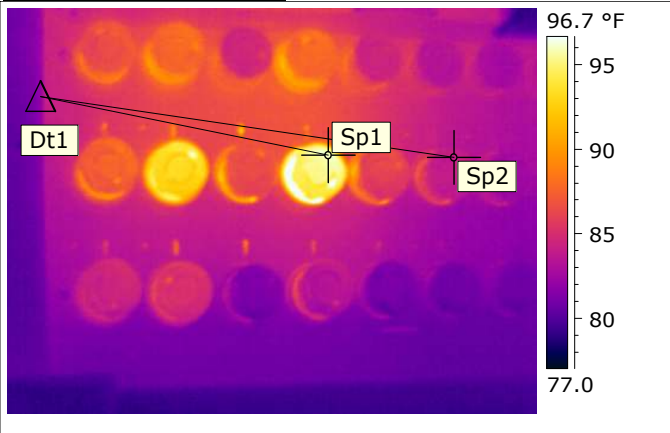
Comment:.....

**Photo and Identification**



Location	SLC
Equipment	Capacitor Bank
Type	
Nom load	
Actual load	
Fault	Over Heating Capacitor
Recommendation	Repair & Rescan

**Thermogram 5/14/2002**



Sp1 Temperature	96.2 °F
Sp2 Temperature	84.2 °F
Dt1 Value	12.0

**Analysis & Recommended action:**

In this picture we are looking at a capacitor bank. It is easy to tell that a couple of these capacitors are running way too hot and could be close to failure. Through the use of predictive maintenance, we are able to catch these problems and fix them before they become a catastrophic event.

**Inspected by :**

(Name)

Signature:.....

date: (date)

Repaired by: .....

date:

Comment:.....