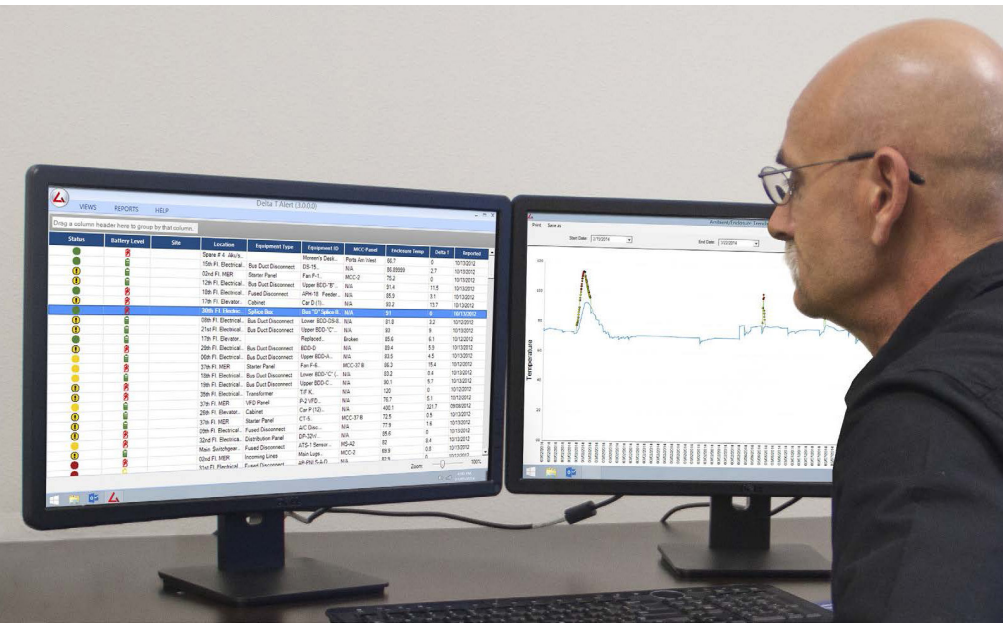


Case Study

A Multi-Tenant Commercial Office Building in New York City, NY. Part 1



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By Martin Robinson, CMRP Level III Thermographer President, IRISS Inc.

Overview:

This proactive client wanted to monitor the electrical panels and disconnects in the facility daily versus annually. Delta T Alert's installed on panels and disconnects on multiple floors of this facility. The DeltaT units were programmed to record temperature rise within the enclosures two times a day. This data was transmitted wirelessly to the Chief Engineer's computer for analysis and trending. On October 6, 2010, forty-four Delta T units were installed within the facility and programmed to send the Delta T data to the Chief Engineer's computer at 10:00am and 3:00pm. On December 23, 2010, APL-24B disconnect showed a Delta T of approximately 45°F.



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Location	MCC-Panel	Equipment ID	Equipment Ty	Enclosure Temp	Delta T	Reported	Status
ALU's Travel Sensor	N/A			77.9	0	12/22 11:43 AM	OK
14th Floor Electrical Closet	N/A	Lower Bus Duct	Bus Duct Discon	85.6	0	12/21 03:23 PM	OK
27th Floor Electrical Closet	N/A	Lower Bus Duct	Bus Duct Discon	96.1	9	12/22 10:44 AM	OK
09th Floor Electrical Closet	N/A	DS-9	Bus Duct Discon	79.9	4	12/22 03:11 PM	OK
25th Floor Electrical Closet	N/A	Lower Bus Duct	Bus Duct Discon	95	7	12/22 03:58 PM	OK
36th Floor Electrical Closet	N/A	Bus Duct Disc.	Bus Duct Discon	84.2	2	12/22 03:10 PM	OK
13th Floor Electrical Closet	N/A	DS-13	Bus Duct Discon	83.7	2	12/22 10:55 AM	OK
ALU's Repeater	N/A		Bus Duct Discon	73.6	0	12/22 10:47 AM	OK
12th Floor Electrical Closet	N/A	Bus Duct Discon	Bus Duct Discon	85.3	0	12/22 03:14 PM	OK
17th Floor EHR	N/A	Car #7E	Cabinet	89.3	9.8	12/22 03:52 PM	OK
37th Floor EHR	N/A	Car #1	Cabinet	98.89999	20.8	12/22 03:12 PM	OK
26th Floor EHR	N/A	Car #12 F	Cabinet	95.5	19.6	12/22 03:20 PM	OK
26th Floor EHR	N/A	Car #8 R	Cabinet	94.4	18.5	12/22 03:11 PM	OK
17th Floor EHR	N/A	Car #1 D	Cabinet	78.1	0	12/22 03:52 PM	OK
14th Floor Electrical Closet	N/A	AC #46	Disconnect	88.5	0	12/22 04:06 PM	OK
Main Switchgear Room	N/A	Bus Duct A	Disconnect	82.9	22.4	12/22 03:21 PM	OK
Main Switchgear Room	N/A	Bus Duct C	Disconnect	61.5	0	12/22 10:45 AM	OK
37th Floor Electrical Closet	N/A	Power Conditio	Disconnect	80.2	0	12/22 10:58 AM	OK
24th Floor Electrical Closet	N/A	APL-24B	Fused Disconn	130.9	45.6	12/23 09:35 AM	CRITICAL
31st Floor Electrical Closet	N/A	FW3 A-D	Fused Disconn	84.9	0	12/22 04:13 PM	OK
26th Floor Electrical Closet	N/A	AC #30	Fused Disconn	85.3	0	12/22 10:42 AM	OK

Figure 1 The 24th Floor Electrical Closet APL-248 fuse disconnect shows an elevated Delta T of 45.6°F.

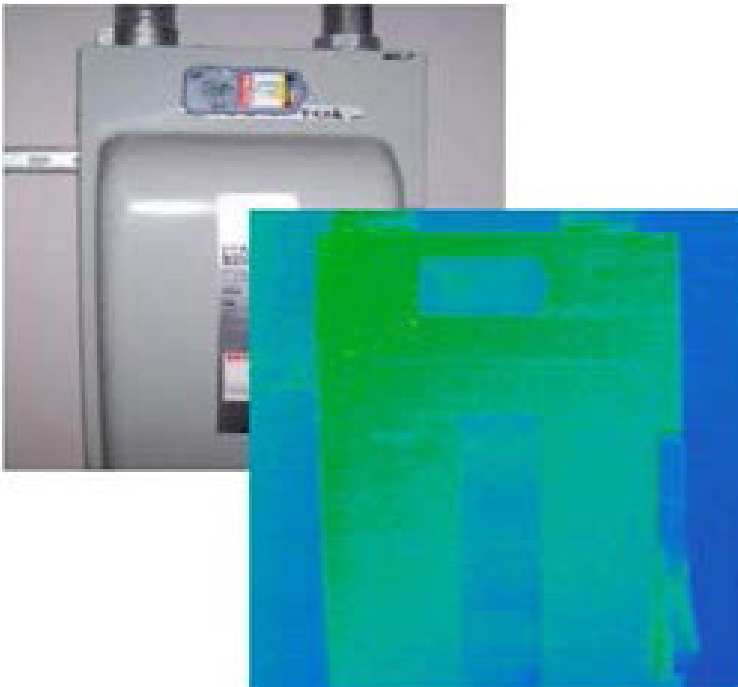


Figure 2 Thermographic image documents that this panel cover is warm.

Event #	Date:	Location:	MCC or Panel	Equipment Label:	Priority
1	12/23/10	24th Floor Electrical Closet	N/A	APL-24B Fuse Disconnect	1
Apparent Temperatures:		Image Date 12/23/2010 Image Time 10:44:37 AM		Reference Photo:	
Problem Temperature: 153.3 °F Reference Temperature: 110.9 °F Temperature Rise: 42.4 °F					

Figure 3 Thermographic and visual image documenting the problem and priority level.



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Identification of Problem

Once the disconnect door was opened and scanned, thermography results show phase's "B" and "C" fuses and fuse connections are warm. This #1 priority requires further investigation to determine cause of the hot spot (Figure 3).

Benefits & Conclusion

- Delta T Alert warned this customer during the early stages of a potential problem and after further investigation it was determined that the problem was due to an imbalance in load current.
- Delta T Alert records two readings per day, 365 days per year versus one infrared snapshot once per year.
- Delta T Alert's prevent downtime or possible catastrophic failure.

Use of IRISS family Electrical Maintenance Safety Devices (EMSDs) such as infrared windows, ultrasound ports, voltage detection ports and online monitoring, allow energized electrical maintenance tasks to safely and efficiently be completed while switchgear enclosure remains closed.

To learn more about infrared windows, Electrical Preventive Maintenance, NFPA standards or electrical thermography please visit www.iriss.com.



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