

A Multi-Tenant Commercial Office Building in New York City, NY. Part 2

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Overview:

This proactive client wanted to monitor the electrical panels and disconnects in the Main Switchgear Room of the facility daily versus annually. Delta T Alert's installed on panels and disconnects in the Main Switchgear Room of this facility. The Delta T 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 November 23, 2010, five Delta T units were installed within the facility and programmed to send the Delta T data to the Chief Engineer's computer at 10:00 am and 2:00 pm. On December 30, 2010, Lobby A/C Fuse Disconnect showed a Delta T of approximately 53°F.

Location	MCC/Panel	Equipment ID	Equipment Type	Enclosure Temp	Delta T °F	Reported	Status
Main Switchgear Room	N/A	Lobby A/C	Fused Disconnect	130	53.2	12/20 09:12 AM	CRITICAL
Main Switchgear Room	BJD-1A	Main Disconnect	Main Disconnect	77.6	9.2	12/20 09:12 AM	OK
Main Switchgear Room	DP-1A	LP-1A	Fused Disconnect	77.4	9	12/20 09:12 AM	Low Battery
Main Switchgear Room	HD-1A	Main Disconnect	Service Switch	76.8	8	12/20 09:12 AM	OK
Main Switchgear Room	HD-1A	CT Cabinet	Current Transformer	79.6	9	12/20 10:16 AM	OK

Figure 1 Main Switchgear Room, Lobby A/C fuse disconnect shows an elevated Delta T of 53.2°F.

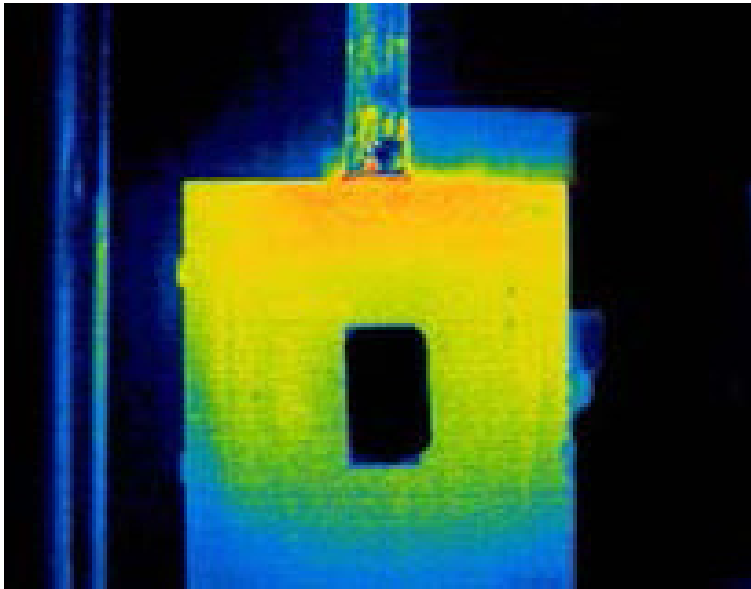


Figure 2 Thermographic image documents that this panel cover is warm.

Identification of Problem

After the Chief Engineer reviewed the Delta T Alert data, thermographic testing was conducted prior to opening the door (Figure 2). Once the disconnect door was opened and scanned, thermography results show phase's "A" and "C" fuses and fuse connections are warm. This #1 priority requires further investigation to determine cause of hot spot (Figure 3).

Event #	Date:	Location:	MCC or Panel	Equipment Label:	Priority
1	1/03/11	Main Switchgear Room	N/A	Lobby A/C Fuse Disconnect	1
Apparent Temperatures:		Image Date: 1/03/2011 Image Time: 10:26:03 AM		Reference Photo:	
<p>Problem Temperature: 148.1 °F</p> <p>Reference Temperature: 92.6 °F</p> <p>Temperature Rise: 55.5 °F</p>				<p>150.0</p> <p>142.1</p> <p>134.2</p> <p>126.3</p> <p>118.4</p> <p>110.6</p> <p>102.6</p> <p>94.7</p> <p>86.8</p> <p>78.9</p> <p>71.0</p> <p>°F</p>	

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

Case Study

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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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