# A Multi-Tenant 1,000,000 Square Foot Commercial Office Building in Jersey City, NJ. Part 2

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## Overview:

This proactive client wanted to monitor the 2nd Floor Electrical Closet of his facility daily versus annually. Delta T Alert's installed on all panels within the 2nd Floor Electrical Closet. The Delta T units were programmed to record temperature rise within the enclosures three times a day. This data was transmitted wirelessly to the Chief Engineer's computer for analysis and trending. On December 29, 2009, five DeltaT units were installed within the 2nd Floor Electrical Closet and programmed to send the Delta T data to the Chief Engineer's computer at 10:30 am, 2:00pm and at 4:30pm. During this initial installation, AP-LC Panel showed a Delta T of 24.4°F (Figure 1).

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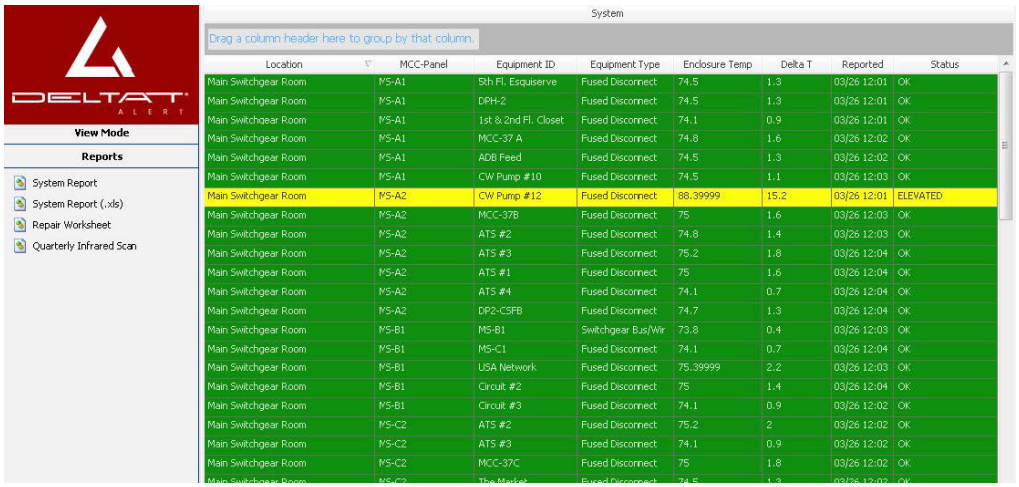
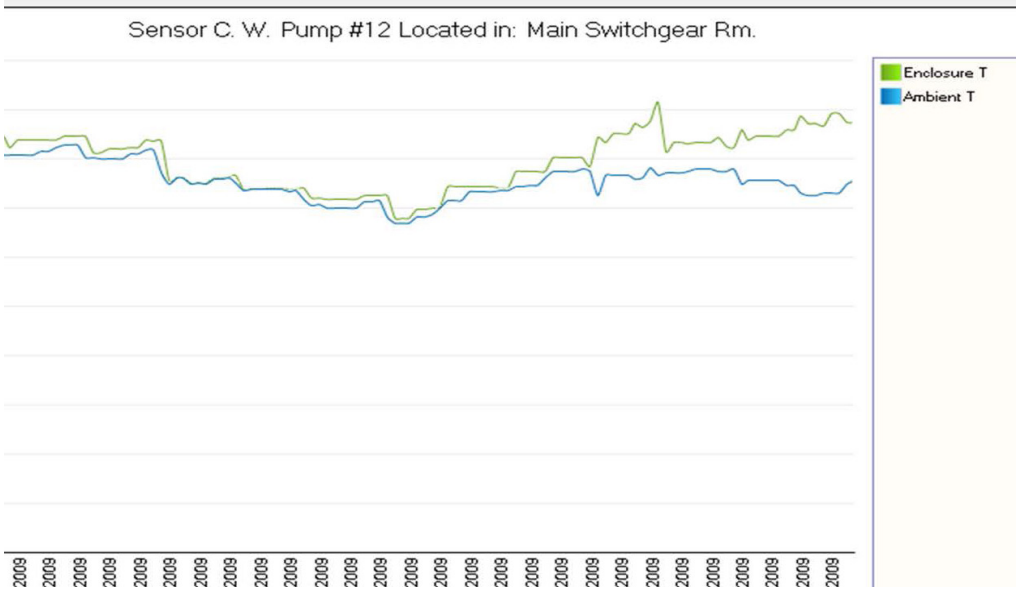



| Location | MCC-Panel | Equipment ID | Equipment Type | Enclosure Temp | Delta T | Reported | Status |
|---|---|---|---|---|---|---|---|
| Main Switchgear Room | MS-A1 | 5th Fl. Esquiserve | Fused Disconnect | 74.5 | 1.3 | 03/26 12:01 | OK |
| Main Switchgear Room | MS-A1 | DPH-2 | Fused Disconnect | 74.5 | 1.3 | 03/26 12:01 | OK |
| Main Switchgear Room | MS-A1 | 1st & 2nd Fl. Closet | Fused Disconnect | 74.1 | 0.9 | 03/26 12:01 | OK |
| Main Switchgear Room | MS-A1 | MCC-37 A | Fused Disconnect | 74.8 | 1.6 | 03/26 12:02 | OK |
| Main Switchgear Room | MS-A1 | ADB Feed | Fused Disconnect | 74.5 | 1.3 | 03/26 12:02 | OK |
| Main Switchgear Room | MS-A1 | CW Pump #10 | Fused Disconnect | 74.5 | 1.1 | 03/26 12:03 | OK |
| Main Switchgear Room | MS-A2 | CW Pump #12 | Fused Disconnect | 88.39999 | 15.2 | 03/26 12:01 | ELEVATED |
| Main Switchgear Room | MS-A2 | MCC-37B | Fused Disconnect | 75 | 1.6 | 03/26 12:03 | OK |
| Main Switchgear Room | MS-A2 | ATS #2 | Fused Disconnect | 74.8 | 1.4 | 03/26 12:03 | OK |
| Main Switchgear Room | MS-A2 | ATS #3 | Fused Disconnect | 75.2 | 1.8 | 03/26 12:04 | OK |
| Main Switchgear Room | MS-A2 | ATS #1 | Fused Disconnect | 75 | 1.6 | 03/26 12:04 | OK |
| Main Switchgear Room | MS-A2 | ATS #4 | Fused Disconnect | 74.1 | 0.7 | 03/26 12:04 | OK |
| Main Switchgear Room | MS-A2 | DP2-CSFB | Fused Disconnect | 74.7 | 1.3 | 03/26 12:04 | OK |
| Main Switchgear Room | MS-B1 | MS-B1 | Switchgear Bus/Wir | 73.8 | 0.4 | 03/26 12:03 | OK |
| Main Switchgear Room | MS-B1 | MS-C1 | Fused Disconnect | 74.1 | 0.7 | 03/26 12:04 | OK |
| Main Switchgear Room | MS-B1 | USA Network | Fused Disconnect | 75.39999 | 2.2 | 03/26 12:03 | OK |
| Main Switchgear Room | MS-B1 | Circuit #2 | Fused Disconnect | 75 | 1.4 | 03/26 12:04 | OK |
| Main Switchgear Room | MS-B1 | Circuit #3 | Fused Disconnect | 74.1 | 0.9 | 03/26 12:02 | OK |
| Main Switchgear Room | MS-C2 | ATS #2 | Fused Disconnect | 75.2 | 2 | 03/26 12:02 | OK |
| Main Switchgear Room | MS-C2 | ATS #3 | Fused Disconnect | 74.1 | 0.9 | 03/26 12:02 | OK |
| Main Switchgear Room | MS-C2 | MCC-37C | Fused Disconnect | 75 | 1.8 | 03/26 12:02 | OK |

Figue 1 AP-LC panel shows an elevated Delta T of 24.4°F




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

| Event # | Date: | Location: | MCC or Panel | Equipment Label: | Priority |
|---|---|---|---|---|---|
| 1 | 03/30/09 | Main Switchgear Room | MS - A2 | CW Pump #12 Fused Disconnect | 3 |

Apparent Temperatures:

Image Date 4/05/2009
Image Time 12:54:16 AM

Reference Photo:

Problem Temperature: 92.4 °F

Reference Temperature: 79.7 °F

Temperature Rise: 12.7 °F


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

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## Identification of Problem

Once the panel cover was removed and the panel was scanned, thermography results show warm neutral wires. This problem was documented and qualified as a #3 priority and required further investigation (Figure 3).

## Benefits & Conclusion

- Delta T Alert warned this customer during the early stages of a potential problem with neutral wires within this panel.
- Delta T Alert records three 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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