

# **INCIDENT REPORT**

START DATE:May 6, 2025START TIME:3:45 PMEND DATE:May 6, 2025END TIME:9:00 PM (Fully Normalized)

**INCIDNET SUMMARY:** Loss of critical power and cooling in Data Hall, L1-130 & L1-135

## **DESCRIPTION OF INCIDENT:**

This event involved multiple incidents that occurred concurrently or in close succession.

Initially, a smoke alarm was triggered in our main power switchgear room. Subsequently, the generators were called upon and started due to the loss of utility power that supplied power to the data hall of L1-130/L1-135 ("L1-130/135").

Following this, the generator source breaker entered a "Locked-Out" condition, which prevented the transfer of the load to the generator feed due to an unstable generator-backed power source after the utility power loss caused by the tripped 4000A breaker.

Consequently, critical power ("UPS") and critical cooling were adversely affected due to loss of utility and generator-backed power.

## **ESTIMATED SEQUENT OF EVENTS:**

At approximately 3:45 PM, Building Engineering was alerted to a significant smoke alarm activation within the main switchgear room of our central plant (refer to the photo attached below). Our building engineers promptly responded to the alarm and commenced an investigation to determine the source of the smoke. However, we were able to confirm that all the power equipment in our main switch gear room shows no signs of burning or damage. We suspect that the smoke could originate from a secured door leading to the utility company's transformer fault located next to the main switch gear room which we have no access to.





Simultaneously, the building's generators were initiated. However, our Building Engineers were unable to directly address the generator activation at that time, as the underlying cause of the smoke alarm had not yet been identified and resolved. Given that a fire life safety situation takes precedence, our immediate focus was on ensuring the safety of the building and its occupants before addressing the power issues.

At approximately 4:15 PM, after 45 minutes of investigation, we were able to reset the smoke alarm within the Building's Fire Life Safety (FLS) System, although the origin of the heavy smoke remained undetermined at that point. It is our assumption that it could originate from the secured door to the utility company's transformer fault located next to the main switch gear room which we have no access to.



Between approximately 4:15 PM and 4:30 PM, our engineers began to investigate the reason for the generator activation. As multiple factors within the building could trigger generator startup, a period of investigation was necessary to pinpoint the specific cause.

Subsequently, at 4:30 PM, the Uninterruptible Power Supply (UPS) system in data hall of L1-135 experienced a shutdown due to battery depletion.

Concurrently, the reason for the generator activation was identified as the loss of utility power to the data halls of L1-130 and L1-135.

At approximately 5:20 PM, our engineers successfully located the source of the power outage, which was traced to the tripped 4000A utility breaker supplying L1-130/135, situated upstream in the main switchgear room where the initial smoke alarm occurred. Following this discovery, our engineers were able to close the 4000A utility breaker, restoring utility power to L1-130/135 at approximately 5:33 PM.

Upon the restoration of utility power at 5:33 PM, all the Computer Room Air Handlers (CRAH) units in L1-135 restarted. However, the UPS in L1-135 did not restart by itself.

Our engineers continued to investigate the reason for the non-restart of UPS in L1-135. While we awaited his arrival, we were on the phone with our UPS support technician when we discovered that the input breaker to the UPS Static Bypass Module was tripped due to the intermittent ground fault condition, which prevented is from resetting it. UPS technician arrived at approximately 7:45 PM, when he started thorough inspection of the UPS System.

At approximately 8:30 PM, he was able to re-energy the tripped breaker and restart the UPS.

By approximately 8:45 PM – 9:00 PM, all systems within L1-135 were fully normalized.

# **CONCURRENT EVENTS:**

Between 3:45 PM and 4:30 PM, the UPS in L1-135 was cycling between its battery power source and the generator-backed power source. It appears that the instability of the generator-backed power source prevented the UPS from transferring to maintain the power supply from generators until the batteries were depleted.

Subsequently, at 4:30 PM, the UPS in L1-135 exhausted its battery power and shut down.

# **ROOT CAUSE:**

Following a detailed investigation conducted by our internal engineering team, as well as two senior electrical consultants from Fakouri Electrical Engineering and Ramboll Electrical Engineering Group, who performed testing and inspection of the electrical equipment involved in



the recent outage—including the UPS systems, PDUs, RPPs, and circuit breakers, tracing from downstream to upstream throughout the entire power infrastructure—it has been determined that there are no apparent issues originating from the building equipment itself. See photo of the tripped Ground Fault Protection behind the 4000A breaker.



Based on the findings of this comprehensive assessment, we believe that the incident was likely caused by an intermittent ground fault originating from one or more pieces of electrically faulty equipment. This could include, but is not limited to, an in-rack PDU located within a cabinet in either L1-130 or L1-135. This intermittent ground fault adversely affected the UPS Static Bypass breaker, upstream 4000A utility power breaker and the generators' ability to provide stabilized back up power source, consequently causing the generator source to shut down by entering a "Lock-Out" condition.

## **ACTION TAKEN:**

Our engineering team is currently inspecting all customer-provided power equipment within the data halls of L1-130 and L1-135. During this process, we identified a faulty power distribution unit within a cabinet in L1-130, which may have been the source of the recent intermittent ground fault. This PDU was removed at 12:00 PM on May 14, 2025.



Furthermore, we have identified another cabinet in L1-130 that was activated less than twelve hours prior to the incident. We are actively monitoring this cabinet and will take the precaution of removing the customer-provided power equipment from our premises should any signs of further issues develop to prevent future occurrences.

## **PREVENTIVE MEASURES:**

We are in the process of scheduling a third senior power equipment consultant from Hawthorne Power System to conduct an additional inspection. Considering their current schedule, this will likely take place next week.

Furthermore, to proactively mitigate the risk of potential ground faults, a new policy concerning customer-provided equipment within our data halls will be implemented with immediate effect. According to this policy, all customer-provided equipment must undergo testing and inspection by our engineers before installation and subsequent use within the building.

## **CONCLUSION:**

My team and I have a long-standing commitment to the diligent operation and maintenance of high-caliber data centers and critical facilities, a dedication that spans more than three decades. We recognize that the recent incident represents an unusual and isolated occurrence. Please be assured that we are fully committed to taking all necessary steps, including the enhanced preventive measures previously outlined, to ensure that a similar event does not recur.



## **INCIDENT UPDATE (05-26-2025):**

On May 20, 2025, the smoke condition in the main switchgear room occurred on May 6, 2025 was finally identified and our subsequent investigation has determined the cause as follows.

Based upon our subsequent investigation, it has been revealed that an arc flash occurred in the 4000A bus duct located in the ceiling of the main switchgear room caused by a ground fault condition initiated downstream from L1-130/135. This bus duct connected the utility feed from the main switchgear room to L1-130/135.

The arc flash had resulted in an explosion that created a puncture on the side of the 4000A bus duct. The puncture on the side of the bus duct was approximately six inches from the adjacent wall. As demonstrated in the attached photos below, this proximity to the wall made this finding difficult to be located during our earlier inspections.







We extend our sincere appreciation to our preferred electrical contractors for their diligent efforts in sourcing a replacement component overnight. This swift action was crucial in mitigating the potential risk of a further incident and damage.

On May 22, 2025, commencing at 7:00 am, a collaborative effort involving three engineering consultants, our preferred electrical team, and our internal engineering department successfully rerouted the 4000A feed to a backup utility source. Subsequently, the damaged bus duct was deenergized and replaced, and the system was fully operational by 2:30 pm. The emergency replacement procedures were completed without any interruption to service for our data center customers in L1-130/135. The replacement is a complete success. A photograph of the new bus duct following the replacement is attached for your review.





New Bus Duct after the emergency replacement