

SITE CONCERNS

The site assessment revealed two key levels of concern: critical concerns are most likely to severely disrupt operations or performance, where moderate levels are the least likely, but could worsen over time. Prompt recognition of issues, whether major or minor, allows for timely intervention, preventing potential hazards, minimizing operational disruptions, and ultimately optimizing the performance and longevity of the systems.


CRITICAL LEVEL CONCERNS

Numerous high-level concerns were identified across the evaluated sites, posing significant operational and safety risks. The following issues were particularly alarming:

Broken Belts and Worn Components: A notable percentage of sites displayed broken belts or excessively worn components that had reached the point of slippage. Such issues jeopardize the efficiency and functionality of the HVAC units, demanding immediate attention to prevent disruptions in the operational workflow.

Non-Functioning Units or Components: Instances were found where key components, including compressors, were not running as intended. This hindered the overall performance of the HVAC units and could potentially lead to compromised cooling and ventilation.

Damaged Coils and Unit Components: A concerning number of sites exhibited damaged coils and other crucial unit components. These damages not only reduce the operational efficiency of the HVAC systems but also present potential hazards.



CASE STUDY FOR NATIONAL GROCERY RETAILER

OVERVIEW

With over 35 years of HVAC experience, Melink collaborated with a national grocery retailer to conduct a comprehensive assessment of 83 sites for HVAC issues. Leveraging their extensive expertise, Melink undertook a thorough evaluation to identify and address operational concerns, of the HVAC systems, focusing on identifying critical, moderate-level concerns, as well as issues related to the Energy Management System (EMS) communication.



Exposed Electrical Components: The presence of exposed electrical components was identified as a fire hazard, necessitating immediate corrective measures to eliminate safety risks.

MODERATE LEVEL CONCERNS

Apart from the critical concerns, a significant portion of the evaluated sites exhibited moderate-level issues that could gradually impact system performance. These included:

Dirty or Missing Filters: A substantial number of sites displayed dirty or missing filters, including economizer filters and outdoor/air filters. This compromises air quality and overall system efficiency.

Dirty Components: Components such as coils, blower wheels, and evaporators were found to be dirty across various sites. The accumulation of dirt and debris diminishes system effectiveness and cooling capacity.

EMS Communication Issues: One-quarter (24%) of the sites had deficiencies with the Energy Management System (EMS) communication. These problems included the non-functioning of the EMS and the inability to control units through the online EMS interface. This indicated potential inefficiencies in energy management and system control.



KEY FINDINGS

Upon evaluation of the HVAC systems across the 83 sites for this national grocer, the following findings were uncovered:

Deficiency Frequency: Approximately two-thirds (**67%**) of the evaluated sites exhibited at least one deficiency that should have been addressed through routine maintenance.

Critical Deficiencies: Similar to the EMS communication issues, **24%** of the sites faced critical deficiencies such as broken belts, damaged coils, and exposed electrical components, jeopardizing both functionality and safety.

Moderate-Level Deficiencies: More than half (**53%**) of the sites had moderate-level deficiencies, with a total of 90 deficiencies identified across these sites (~2 deficiencies per store). These deficiencies, while not immediately critical, could accumulate over time and lead to reduced efficiency.



CONCLUSION

The evaluation highlighted critical concerns in the HVAC systems of this grocery retail chain, including major operational deficiencies and safety risks. Urgent action is recommended to address the broken components, damaged coils, and exposed electrical elements, while routine maintenance and cleaning are necessary to mitigate the impact of dirty filters and components.

Moreover, rectifying the EMS communication issues is crucial for effective energy management and system control. Implementing a comprehensive maintenance strategy and investing in repairs will not only ensure the functionality and safety of the HVAC systems but also contribute to energy efficiency and customer comfort across the retail sites.

Figure A

1/3 of surveyed sites had no deficiencies

1/4 of sites had deficiencies related to EMS issues

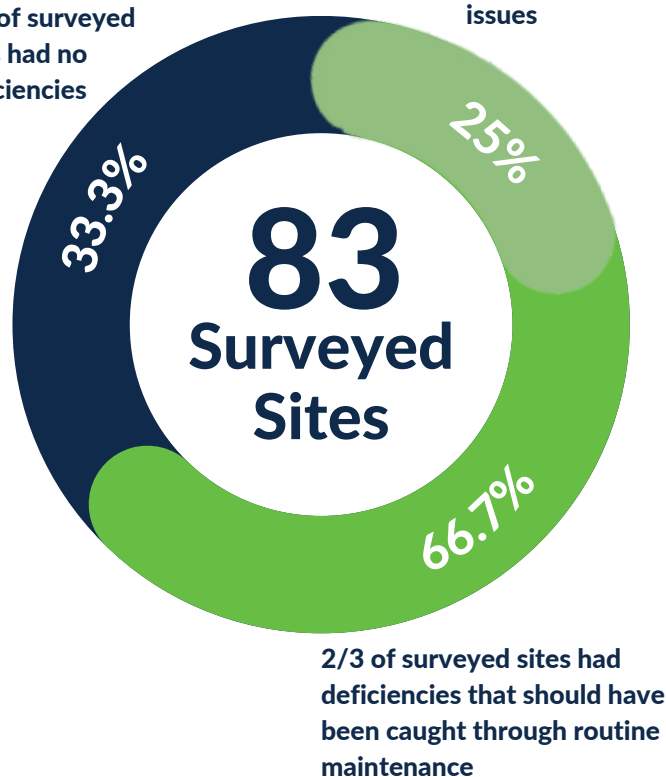


Figure A shows the overall percentage of surveyed sites with deficiencies and the number of sites with EMS issues.