NATIONAL TAB
INTELLIGENCE

1329 E Kemper Rd
Suite 4210
Cincinnati, OH 45246
[855] 682 6822

Summary

This Pick N Save Location is set to have a new Deli hood installed to replace an existing one. The purpose of this visit was to identify any potential issues surrounding the addition of exhaust volume to the space and perform a total flow Test and Balance to determine if any additional make-up air is required or available. Any additional issues we discovered during our visit are also listed in this Report.

Technical Summary:

Exhaust

As is, the deli exhaust equipment is not performing its purpose. The deli walls and ceilings are covered in grease. There are two Type I canopy hoods installed in the deli (HD-1 and HD-2) and both are served by short cycle style MUAs (SF-1 and SF-2).

HD-1 is the deli hood scheduled to be replaced. The exhaust for this hood was measured at an appropriate level for its application (2157 cfm), however the Hood is not deep enough for the cooking equipment it serves and smoke capture is very poor. The hood filters are extremely dirty and the short cycle MUA (SF-1) is only blowing smoke around in the hood canopy, further disrupting smoke capture.

HD-2 serves a fryer and shares a back wall with HD-1. The filters for this hood are not secured in place. It appears the bracket that holds them in, is broken. Exhaust airflow for this hood was measured at 1591 cfm with the filters unsecured, which is high for this application. With the filters in their correct place, however, we feel the exhaust flow would be closer to an appropriate level (around 1100-1300 cfm). The filters for this hood are also extremely dirty and in need of replacement. As with HD-1, HD-2 is served by a short-cycle MUA (SF-2). This fan's blower wheel is broken and is not operational. We were unable to measure its airflow.

Ideally, we would recommend HD-2 be replaced in addition to HD-1. At the very least, HD-2s filters and filter supports need to be replaced.

The Short-cycle MUAs (SF-1 and SF-2) are also not ideal for comfort and not conducive to hood capture. Both are devoid of heating or cooling and pump untreated outside air into the space. If these are to remain on both hoods, we recommend they are ducted to Perforated Supply Plenums (PSPs) positioned in front of the hoods instead of the short cycle style as this is disruptive to hood capture.

There is also a Bakery Oven in the back Deli Area served by EF-3. Initially this fan was measured at 1467 cfm and the speed controller set to max. The fan was slowed to approximately 912 cfm, a more typical airflow for these ovens. One of the panels in the oven exhaust "Hood" is missing, we recommend that panel is replaced as something could fall down the exhaust duct and cause injury.

There are several ceiling exhaust fans in restrooms located in the store. Many of these fans are not running or are clogged with dirt. Their impact on building pressure is negligible.

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There are two compressor rooms with louvered exhaust located in the store. The western room appears louvred and sealed from the rest of the store properly. The central compressor room, to the west of AHU-1, has its door left open to the loading dock area. It appears part of the room is used for cleaning storage. Additionally, one of the exhaust fans and its louvre does not appear to be operating properly. Recommend the fan and louvre is serviced, and room is kept sealed to prevent impact on total building pressure when compressor room exhaust is operational.

Total exhaust measured: 4660 cfm

Make-up Air

The store is primarily served by one large Air Handler (AHU-1) mounted in the rear loading dock of the store. The return for AHU-1 is not ducted and pulls directly from the loading dock area. There is no Outside Air intake of any kind installed. Ideally, it would be best to bring in additional make-up air through AHU-1 as it is supplying 22,784 cfm to the space. However, due to its location and orientation, we do not see how the addition of outside air to the AHU-1 system is plausible.

There is also an un-ducted AHU that serves the storage area in the north-western most corner of the store. The addition of outside air to this system would not address our need and does not seem plausible.

There appears to be at least one mini-split system serving a front office or security room in the store. Unfortunately, this also does not offer any make-up air solution.

The Deli area is served by a Greenheck MUA. This unit is not conditioned and only offers heating. It is ducted to 3 diffusers positioned around the bakery oven that are each outputting roughly 800 cfm each for a total supply of 2415 cfm. This MUA application is not ideal as the unit will be dumping a large amount of hot humid air into the space during summer months. The unit is operated by a wall switch and employees do not appear informed on its use or purpose as the unit was not running when we arrived on site. Recommend this unit is interlocked with exhaust operation.

As mentioned previously, there are also two short-cycle style MUAs serving HD-1 and HD-2. SF-1 was measured at the roof intake to be providing 1601 cfm of make-up air. SF-2 was not operational and could not be measured.

Total Make-up Air: 4016 cfm.

Recommendation:

The Store is currently -644 cfm negative. Repairing SF-2 might achieve a closer to net neutral airflow, however the installed sources of make-up air are inefficient and unsatisfactory in our opinion. The short-cycle style make-up is not conducive to hood capture, and the installed Greenheck MAU will lead to

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significant comfort issues. If the new exhaust hood will be a higher volume of exhaust air, an additional outside air source will be necessary.

One ideal solution would be the addition of a DOAS unit to replace the installed Greenheck MUA. A DOAS would provide the proper conditioning and heating for the deli area as well as properly and efficiently deliver the necessary outside air to push the building positive.

Please note the additional issues highlighted in this report that were discovered during our visit.