From: Martin Schooping
To: Leanne Bossert
Subject: FW: Final Report smoke test concerns.
Date: Wednesday, February 12, 2014 2:40:43 PM

Marty Schooping

585-475-6759

From: cakers@isolationsciences.com [mailto:cakers@isolationsciences.com]
Sent: Wednesday, February 12, 2014 1:58 PM
To: Martin Schooping
Subject: Re: Final Report smoke test concerns.

Martin,
Thanks for the change in the final report and the dropping of the last sentence in the one-page case study, These changes will allow me to use the report and case study to promote the Fume Hod CAP. no further action from your is requested.

May I get a digital copy of both the revised final report and the revised case study. I am going to a national ISPE meeting next week and would like to have them for public release.

Chuck Akers

On February 12, 2014 at 8:30 AM Martin Schooping <mpsasp@rit.edu> wrote:

> Charles;
>
> Per your email below, I would like to point out that we addressed your concern about the qualitative smoke test on page 10 of the final report in the following paragraph:
>
> > *Smoke test results for the fume hood prior to installation of the CAP device also ranged in the "good" to "excellent" range. One noteworthy comparison was the performance in a situation when a person opened a door adjacent to the fume hood and walked quickly past the fume hood. The rating improved from "good" to "excellent" with the installation of the CAP indicating improved containment in situations involving rapid pressure changes and swift movement past the fume hood. The qualitative smoke test did not detect any other differences in containment.*
>
> If your concern is about the sentence in the conclusions section on page 13 "*The smoke test results demonstrated that the CAP filled fume hood opening contained contaminants as well or better than an open fume hood with the same face flow velocity*.", I have asked the EHS engineer who performed the test to weigh in on the description. I will likely follow her recommendations on the issue.
>
> *Martin Schooping*
> Senior Project Manager

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From: cakers@isolationsciences.com [mailto:cakers@isolationsciences.com]
Sent: Thursday, February 06, 2014 10:12 AM
To: Daniel Smith
Subject: RE: NYSP2I Project Case Study for Isolation Sciences

Dan,

I have only one comment to make on the case study and it deals with the last sentence of the document.

Problem:

The statement made is that the CAP shows equal or better containment than a normal fume hood was based on a smoke evaluation test.

Comment:

Fume hoods are evaluated using ASHRAE 110 test procedures to measure three parameters: Face felocity of air going into the fume hood, does the fume hood exhaust fume hood air back into the laboratory as shown by visualizing the direction of a small smoke flume, and the level of containment as shown by SF6 tracer gas. I believe that the results of the smoke test is misleading as they are mentioned in the final report and the case study as was mentioned at our exit meeting.

The smoke test is to indicate if the configuration of baffles and equipment within the fume hood generates any air turbulence that can generate sufficient air flow to counter the laboratory air being drawn into the fume hood and cause air to be exhausted back into the laboratory instead of directly outdoors. This test is to indicate if there is any counter fir movement out of the fume hood which can lead to lab contamination. If there is, then the test fails and the fume hood can not be used because it is exhausting contaminated air directly into the lab.

The ASHRAE test for containment relies on using SF6 gas as a tracer released inside of the fume hood at 4L/min. This is a quantitative evaluation that measures the amount of gas that can escape back into the room from all mechanisms: air dynamics within the room, traffic in front of the fume hood, movement of arms within the fume hood, and the sash being raised and lowered. If the concentration of SF6 at a present position outside of the sash is below a certain limit, then the fume hood can be used. This is a pass/fail test.

The last sentence indicates that the ASHRAE test, which is used to visualize if any reverse airflow direction exists in front of the fume hood, is a test that indicates the containment comparison between the CAP and the control fume hood. Again the pencil smoke test indicates reverse air flow from a fume hood not containment capability.

Safety people will know that this test is a reverse airflow test and not a containment test but others such as laboratory designers, consulting engineers, facility directors, CFOs, lab management, or fume hood end-users will not. I mentioned my concern at our exit meeting but no action was taken and feel this statement is misleading.

Chuck

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