

The following is the recollection of the questions and responses during the panel discussion at the APBA conference 2006. by *Theodore J. Traum, P.E*, Principal of Council Rock Consulting Inc.

Response to what are the characteristics of a leaky lab inquiry:

The term "Leaky Lab" is associated solely with BSL-3 laboratories. Air is infiltrated into a lab from the entry (anteroom or change room) via an undercut in the door to create a differential pressure between the entry space and the BSL-3 Laboratory (usually 12.5 to 15 Pascal). To achieve this pressure differential the room's penetrations must be sealed (i.e. electrical receptacles, sprinkler heads, lights, diffusers, door frames, communication devices, fire alarm devices, pipe penetrations duct penetrations etc.). To compensate for leaks through these penetrations the exhaust for the room is increased to obtain the pressure differential at the door undercut. As the air infiltrated into the room increases, thermal comfort of the room may become an issue since the infiltrated air may not be at the same temperature as the supply air. Also, the infiltrated air may be unconditioned and/or unfiltered, therefore, resulting in an added heat load to the room and added HEPA filtration loading.

Occasionally, the BSL-3 Lab will require gaseous decontamination which would require that all penetrations including the door undercut will need to be sealed. Plastic and duct tape are the usual methods. Each possible penetration of the barrier should be sealed except for the fire sprinklers. The sprinkler heads cannot be covered since they need to be able to operate in the event of a fire. If recognized barrier penetrations have a good seal then the plastic and duct tape may not be necessary, but when used would create a redundant seal.

Do animal BSL-2 (ABSL-2) containment facilities need a redundant air handling unit?

Loss of experimental or control animals as a result of a prolonged HVAC failure could result in loss of significant research data. A redundant air handling unit reduces the risk that the staff will not detect the HVAC failure and relocate the animals. If there isn't HVAC redundancy there needs to be sufficient space outside of the effected space to house the experimental animals. In addition, at the time of the HVAC failure there needs to be sufficient available personnel to move the animals. This may be an issue on holidays and outside of normal working hours. A redundant air handling unit would minimize this concern as well as eliminate the stress on the animals that they would incur if they had to be relocated.

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