Cleanroom Solution Found With Aid From NASA Program

In order to minimize the risk of post-operative infection, medical device manufacturer Anspach Effort must ensure the sterility of its high-speed drill system used for skull and spinal surgery. Consequently, when the project team at the company began to note spikes in a particle count test in the cleanroom, an immediate solution was sought.

"While these spikes by themselves were a concern more than a problem, the unknown cause was a worry because we felt an uncontrolled factor could take a turn for the worse and could force us to suspend our packaging operation," said Gary Riggs, manufacturing engineering manager at Anspach Effort.

After unsuccessfully attempting to locate the cause of the spikes, Riggs contacted the Space Alliance Technology Outreach Program (SATOP), which is a NASA-funded initiative. Through SATOP's Florida center, Anspach Effort's project team was introduced to Harland Hyde, P.E. from AJT & Associates Inc., one of SATOP's Alliance Partners. Hyde, who has 30 years of engineering experience, has designed more than 20 clean and sterile rooms for manufacturing and laboratory use.

After investigating the situation at the company, Hyde determined that it was more important to simply clean the air than to worry about the source of the spikes. "The air conditioning supplies finely filtered air through typical ceiling grilles, which stir up the room air to prevent pockets of still air," he explained. "Because all the air returns are near floor level, it is likely that some of the warm air keeps circulating at ceiling level. I recommended that at least one ceiling return with a HEPA filter be installed."

Following the implementation of Hyde's recommendations, all particle counts in the cleanroom are down at least 30 percent, with some down as much as 75 percent. "I no longer worry about particles in this area," Riggs said.

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