

August 6, 2010 For immediate release

## Onsite Speech Privacy Testing at Sensitive Compartmented Information Facility (SCIF) Proves Its Value

General Electric's Aeronautics plant in Evendale, OH recently completed the renovation of an office area where classified military contract work is to be conducted. In accordance with policy, security experts at the plant and the U.S. Air Force began the process of certifying compliance with physical security standards for such facilities.

One major concern focused on verifying achievement of "100% speech privacy" - a level of sound isolation that would prevent conversations held within the classified work area from being heard and understood in adjacent work areas. Detailed performance standards and onsite audio testing methods are specified by the U.S. Central Intelligence Agency (CIA) in "**Director of Central Intelligence Directive (DCID) 6/9 — MANUAL: Physical Security Standards for Sensitive Compartmented Information Facilities** (Effective 18 November 2002) and the Defense Intelligence Agency's Manual "**DIAM 50-3: Physical Security Standards for Construction of Sensitive Compartmented Information Facilities.**"

To be sure, this was not the first time that GE had constructed classified work areas at the plant. Dozens of secure offices were constructed in the late 1980s, and some even earlier. While GE's extensive experience in construction and operation of such facilities provided a proven architectural design for the renovation work, that same experience also highlighted the need for attention at all perimeter doors. Despite diligent workmanship, achieving the required Field Sound Transmission Class (FSTC) objectives at doors could rarely be achieved without onsite testing and assistance in adjustment of sound-rated doors and seals by an audio security expert.

The doors for the current project were manufactured by Ceco Door Company fitted with Zero International seals, supplied by Norwood Hardware and Supply Co (NHS). The complete door assemblies had been rated as providing STC-52 Sound Transmission Class performance in lab testing; that level of sound isolation exceeded the targeted Field Sound Transmission Class performance objective of FSTC-45. But could such performance be achieved in the field installation? Simple tests involving people talking inside the secure areas while others listened in adjacent hallways immediately indicated speech privacy deficiencies at virtually every door.

After discussing the situation with the client's security experts, NHS retained the services of Cincinnati-based Spectra Tech Ltd, a project design firm headed by Richard Lemker, President / Lead Consultant. Mr. Lemker, recognized nationally as an expert in the field of audio security, had previously worked with members of the GE project team on similar projects, dating back to the late 1980s, using a proprietary system for testing and adjusting SCIF doors. He is also considered a pioneer in the utilization of ambient noise as a variable in achieving speech privacy, a capability he developed through cooperative work with Dr. Robert Chanaud, the creator of the Privacy Index (PI) speech privacy rating system recently endorsed by the American Society for the Testing of Materials) as "**ASTM WK8777 - New Standard Test Method for the Objective Measurement of Speech Privacy for Closed Architectural Spaces.**"

Spectra Tech's initial tests of numerous installed doors indicated that typical performance was in the range of FSTC-41/42. The 10-point deficit from the lab test rating is typical of all installed sound doors, due to the inherent difficulty in adjusting the door seals. Spectra Tech also quickly pinpointed the exact locations along the door seals where the seals were allowing sound to pass, thereby degrading speech privacy. Construction crews, under the direction of factory personnel, made field adjustments to the seals, and the doors were re-tested.

The second round of tests proved that the doors could achieve FSTC-46, if the seals were ideally adjusted. In some cases, however, optimum seal adjustment might not be achievable, due to individual mounting circumstances. Spectra Tech therefore computed the tuning spectrum and Sound Pressure Levels that a sound masking system or devices would need to provide in order to offset the measured FSTC deficiencies, or to compensate for lower ambient noise levels at a door location. The project was completed and certified as acceptable by security personnel.

For Spectra Tech, achieving the daunting performance requirement of "100 % secret" audio privacy was all in a day's work. According to Mr. Lemker, the company utilizes the same techniques to test, rate, and assist in achieving speech privacy for a variety of other clients on projects including multifamily residential buildings, schools, corporate executive offices, and open plan office space.

Visit the Spectra Tech website at [www.SpectraTechLtd.com](http://www.SpectraTechLtd.com)