



## **Human Assurance Laboratory (HAL)**

The Human Assurance Laboratory (HAL) at the Oak Ridge National Laboratory (ORNL) serves as a national and international resource for tools, technologies, and techniques to support the Human Reliability Program (HRP), which is also called Personnel Reliability Program (PRP) mission space. HAL support to the community includes: (1) research and development of new technologies; (2) evaluations of methods; and (3) specialized training.

### **Global Issue**

Human reliability, insider threats, and human performance are growing areas of concern worldwide. The U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA), Department of Homeland Security, and Department of Defense, as well as numerous countries, have enough concern in these areas to establish programs that mitigate these risks. Recent insider issues at U.S. Government facilities show security deficiencies in the public health and biodefense arena. Generally, personnel security issues at nuclear, chemical, and biological sites are seen as a local management concern; however, they may be viewed in more sensitive facilities, and in international situations, as a threat to national security. HRPs/PRPs, are proven ways to counter the personnel security and insider threat issues.

### **ORNL Resources and Experience**

Over the past several years, the ORNL HAL has been involved in the HRP/PRP development and implementation for the United States and the Russian Federation (RF) as well as other countries. ORNL has a broad base of experience anchored by the former director of the Oak Ridge Associated Universities Center for Human Reliability Studies and augmented by associations with Oak Ridge businesses in the field of drug testing and medical and psychological evaluations. A number of HAL staff are available to provide technical contributions to address these growing areas of concern.

HAL staff has played a key role in the development of a fully documented RF PRP funded by NNSA Office of Nuclear Weapons Protection. Additionally, HAL staff has assisted the NNSA Office of Global Threat Reduction by reviewing and producing a documented analysis of insider threat through participation on the Insider Threat Action Team. HAL is supporting the NNSA Office of National Infrastructure and Sustainability (NA-255) in the implementation of an HRP/PRP for the RF Interior Ministry organization, which protects civilian nuclear assets. The ORNL HAL is becoming the recognized leader for HRPs/PRPs and strives for world class center of excellence status for insider threat, human assessment, and human performance risk mitigation.

### **ORNL World Leader**

ORNL is a world leader in many technology areas that support research into new methods of detecting deception and has world class assets in others. Technologies such as: heart-rate presence monitors, thermography, Doppler ultrasound, and trace chemical emissions have been screened as methods to detect deception. In addition to these technologies, HAL also has other assessment tools under further evaluation for personnel security access authorization and control applications.

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