ABSTRACT

Subir K. Sen¹, Theron K. Cordray², James Macandrews³, Werner Bergman⁴, Mark Ryan⁵ and Richard Frounfelker¹

HEPA filters are installed in the Department of Energy (DOE) nuclear facilities to protect against the release of material to the atmosphere and thereby serve to protect workers, the public, and the environment. DOE tests selected HEPA filters at the Filter Test Facility (FTF) that have been identified in the Secretary of Energy Directive issued on June 4, 2001, “100 Percent Quality Assurance Testing of HEPA Filters at The DOE Filter Test Facility”, to ensure that the filters meet required specification. These tests are in addition to the tests performed by the filter manufacturers per the requirements specified in the procurement document. HEPA filters are directly shipped to the FTF from the manufacturers for inspection and testing, and those that pass are shipped to the DOE facilities.

Due to cleanup activities being conducted at the Oak Ridge site, the FTF has been relocated from its Oak Ridge site to a new location in Baltimore. Air Techniques International (ATI), Inc, the new owner and operator of the FTF, has entered into a contract with DOE to provide independent testing of HEPA filters. In accordance with the contract it is required that, prior to the resumption of HEPA filter testing, DOE will conduct a restart audit to verify that the contractor’s Quality Assurance (QA) Program meets the requirements of the applicable sections of American Society of Mechanical Engineers (ASME) NQA-1-2000.

The audit focused on the inspection and testing of High Efficiency Particulate Air (HEPA) filters and how they conform to the requirements as defined in the Audit scope. Specific areas reviewed included: (1) quality assurance program including implementation, (2) technical capabilities, and (3) equipment operation and calibration. Detailed checklists were used to guide the auditor’s questions and lines of inquiry. The audit team identified certain start-up conditions that needed resolution prior to the start-up of the FTF. They included changes to ATI Quality Program Plan and procedures, documenting eye test results of all testing personnel, recalibration of certain measuring devices and revalidation of certain testing procedures and software. These changes were all accomplished subsequent to the audit to the satisfaction of the audit team. Implementation of the overall QA Program requirements in NQA-1 and the technical requirements in the DOE standards was determined to be satisfactory.