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Second Line of Defense Program, Secondary Screening Operations Field Data Collection—Summary

For the DOE Second Line of Defense Program

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Prepared for the
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Secondary Screening Field Data Collection—Summary

Secondary screening is a key component of the Second Line of Defense (SLD) Program's capability to deter, detect, and interdict the illicit trafficking of radioactive materials. The *primary detection system*—the radiation portal monitor—makes alarm decisions based on gross counts of gamma and neutron radiation; it is able to provide little other information regarding what may have caused an elevated radiation level. Conducting a proper secondary screening with an instrument capable of identifying radioisotopes is the only way to determine what radioactive material is present—most importantly if it is a threat material. *Only by knowing the radioactive material can a prudent decision be made with regard to disposition and response*—and can the mistaken release of a threat be avoided.

Understanding that, in reality, secondary screening for every alarm is not achievable in almost all cases, the SLD Program personnel are seeking to optimize what can be done with the tools that have been deployed and to recommend other tools or practices if necessary. To do this, reliable knowledge about how secondary screening is currently being conducted in the field is needed.

Although some central alarm station systems can record secondary screening information (e.g., whether a secondary inspection was conducted, what the outcome and radioisotopic identification device spectra were, etc.), the information is not universal in format or availability; is not consistently entered by operators; and has not been collected, organized, or analyzed in a formal, coherent way. The same is true for the information in logbooks (at sites where they are kept).

Much of the current SLD corporate knowledge is anecdotal or incomplete, and although it is not without value, a more complete and objective body of information is needed to understand and inventory current practices, share best practices, and make sound recommendations for improvements in operations or new equipment. As well, a better understanding of reliable data will make a stronger case when staff is responding to questions from partners and sponsors.

To accomplish the systematic collection of this information, SLD is asking its representatives in the field—sustainability managers, Los Alamos National Laboratory subject matter experts, etc.—to collect information that can be used to document, evaluate, and improve the practice of secondary inspection in a careful, systematic way. Collecting this information is an effort to understand the existing conditions in a more methodical way so that the knowledge can be used to understand and improve the SLD's secondary screening practices.

Understanding the status quo and optimizing tools and practices are important during transition and will become more important in ensuring that operational sites are maintained as partner countries assume responsibility in the post-transition phase.

Concerns about the data that are collected include the completeness and accuracy of what partners report; the willingness or authority of partners to share certain sensitive or proprietary information; suspicion about the motive(s) for interest in the information; access to a knowledgeable interlocutor; and site-specific, unique requirements or conduct of operations.

Some of these concerns are to be expected and will have to be accommodated; all of them can be approached with an understanding of the inherent limitations and with best-practice solutions.

Currently, success in acquiring the information has been aided by developing and making use of trusted relationships; being sensitive, open, and transparent; gathering information from multiple conversations in the normal course of business (rather than conducting a single, formal interview); focusing on the key points; comparing multiple sources of information when possible; and being mindful of the quality of the data. Problems and solutions at sites that seem unique may apply, or have aspects that apply, at other existing or future sites. Counterparts must be assured that the information will not be attributed, is not for performance measurement, is only for SLD's use, and will help improve operations SLD Program-wide.

The "conversational questions" outline and the associated spreadsheet are intended to be guidelines as an aid to record keeping and reporting. The benefit of reporting in a spreadsheet form is that the data can be organized and analyzed in a quantitative way and can be more easily archived. The "concept tree" is a more intuitive guide to what information the program is seeking to collect.