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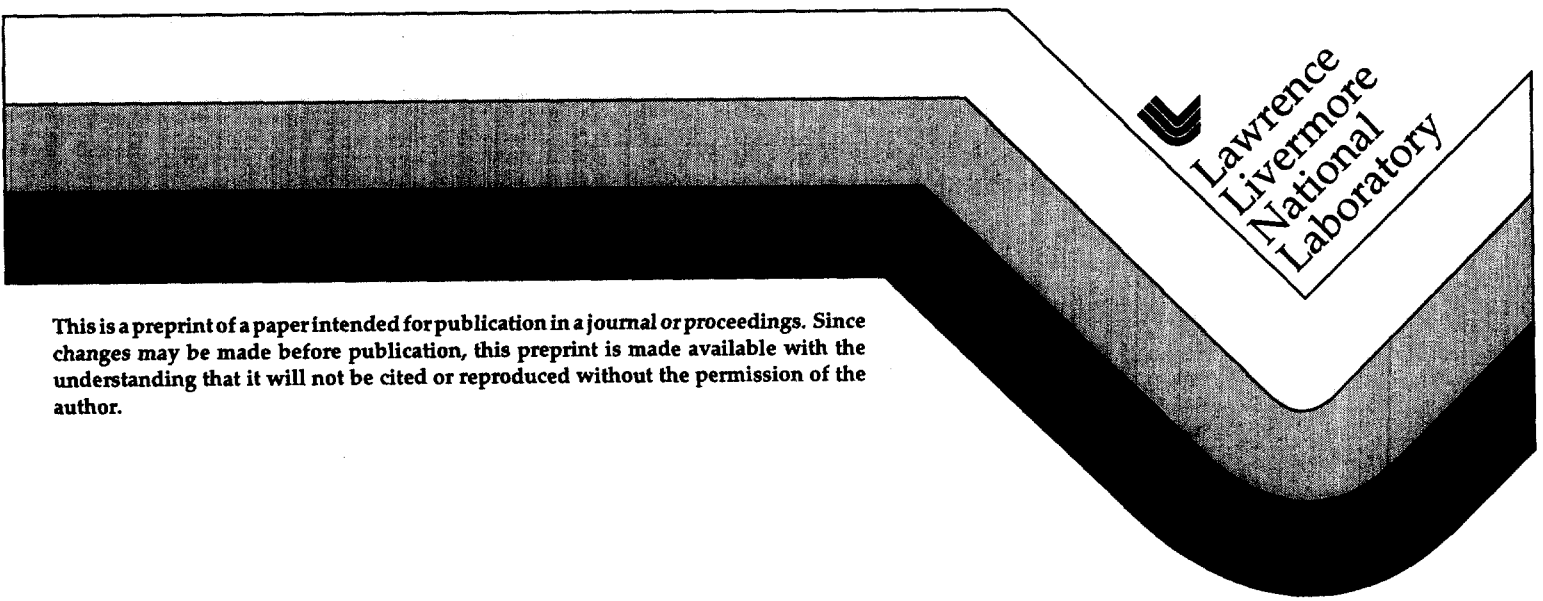
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Integrated Training for the Department of Energy Standard Security System

M. Wadsworth

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Integrated Training for the Department of Energy Standard Security System

Mary Wadsworth
Lawrence Livermore National Laboratory, L-191
P.O. Box 808, Livermore CA 94550
510-423-8496, Fax: 510-422-2847
Wadsworth4@llnl.gov

Abstract

Lawrence Livermore National Laboratory has been successful in designing and providing technical performance-based training for the Argus security system. This training has been developed for technical and operational staff at facilities installing or using the Argus security system. The Argus training program is designed to instruct candidates to become the trainers for their facilities.

The design criteria of the Argus training program includes:

- Meeting orders of the Department of Energy and the Department of Defense,
- Being flexible for a changing environment,
- Customizing lessons to site's needs, and
- Configuring for a specific job.

The Argus training staff has implemented a successful process for designing and developing integrated training to support complex systems, each with its own operational needs, and adapting it to specific sites.

Introduction

The Department of Energy (DOE) has selected the Argus security system as its standard security system for protecting high value assets, including special nuclear materials.

The Argus security system is a sophisticated, comprehensive security system with an extensive arrangement of hardware and software components. This system was designed to meet the security requirements of DOE and the Department of Defense.

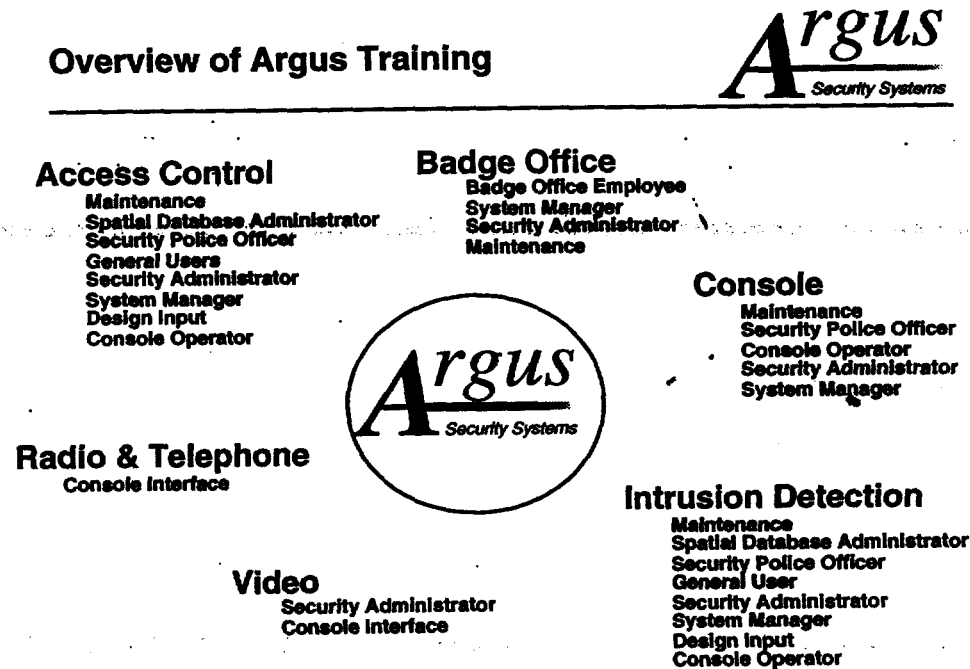
Overview of Argus Training

Argus training is divided into the following functional areas:

- Badge Office Applications,
- Console Operations,
- Database Design Applications,
- General Users, Maintenance Applications,
- Security Administrator Applications,
- Security Officer Applications,
- Spatial Database Administrator Applications, and
- System Manager Applications.

Each function is divided into lesson plans covering specific tasks. This approach has worked very well because it allows sites to conduct training and customize training courses according to their needs.

The following diagram shows the six operational training areas and their related subjects.



Training Development

DOE orders, standards, and guidelines give directions for developing and implementing a training program. Developing a training plan is the first task in developing and implementing a training program.

Argus Training Plan

The Argus training plan includes our mission, supporting goals, a description of the responsibilities for the Argus training group, and trainees, and the qualification standards for the instructors and materials. Also, the plan identifies the process, procedures and methods by which the group develops and conducts the training. This reinforces a smooth transition for the transfer of knowledge and skills essential for competent job performance.

The Argus training group's mission is to provide valid, efficient, and effective training to support the installation, operation, and maintenance of the Argus security system.

This program is designed to train candidates to become certified trainers of the technicians and support staff at their sites.

The following are the goals for supporting the mission of the Argus training program:

- Provide timely, accurate up-to-date training,
- Update training materials with each major software and hardware release,
- Ensure compliance with all safety aspects,
- Provide performance-based training, at the highest standard, using the Instructional Systems Design Model,
- Ensure resources are available to accomplish the program mission at a high level of achievement,
- Ensure the training program meets the requirements of DOE Order 470.1,
- Determine the training prerequisites and requirements of sites installing Argus software and hardware, and identify outside vendor training,
- Maintain audible training records that reflect training completion, and
- Provide training and oversight to ensure that trainers are qualified to deliver Argus training materials.

The training program is well planned, organized, directed, documented, and systematically evaluated so that the proper resources are available and used in an optimum manner to accomplish the training program mission.

Manager Certification and DOE Training Model

Lawrence Livermore National Laboratory has met the DOE Training Order that requires the manager of the Argus training group to be certified by the DOE Central Training Academy (CTA). The core training

principle of DOE requires a systematic training model for developing training. The Instructional System Design Model (ISDM) was the model selected and approved for Argus training. CTA uses this model, and it is similar to the model used by DoD.

The model consists of five phases: analyze, design, develop, implement, and evaluate. These phases allow for the creation of standardized training that is specific to the job and task, and can be consistently delivered to trainees. ISDM presents a road map to follow for developing material, making it easy for the curriculum design specialists and instructors.

Argus training is developed using table-top job analysis. This type of analysis works best for developing training for functionality that does not already exist.

Conducting a table top analysis consists of forming a working group. This working group consists of future users, project managers, Argus software and hardware developers, and users doing similar work. The working group meets to determine goals, objectives, trainee prerequisite knowledge, and the sequence of implementing training. Once these are determined, the training group, using available reference material and the information gathered at the meetings, develops a draft of the lesson plans. After developing the draft, the group reviews the draft lesson plans and makes necessary changes before the documents are considered complete.

Design of Training Materials

Training documentation includes the instructor's guide, student guide, job aids, and viewgraphs.

The instructor's guide includes instructions for setting up the training sessions, applicable training aids, a separate training section within each lesson plan. The instructor uses the training section as student handouts.

Training may be conducted with a lesson plan or by combining lesson plans, according to site requirements.

System Release Training

A system release is the tested and integrated release of enhanced software and hardware deliverable to sites. Training is updated with the software change process. Training updates or workshops are the tools for training candidates on new functionality. This initializes the creation of the system release workshop. A representative from each site is invited to attend the workshop. The workshop details new functionality. As part of the workshop, the Argus training group and software development staff

provide sequential installation procedures to assist sites with installation.

Conclusion

Training has been successful due to commitment to the customer to train their employees to a level that enables them to operate and maintain their system. It is also successful due to the involvement of the system developers in creating the lesson plans and implementing the training.

Our post evaluations have shown that the training has been effective in meeting the training needs of the system users.

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Technical Information Department • Lawrence Livermore National Laboratory
University of California • Livermore, California 94551

