Certification for Government Oversight of Manufacturing

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The Chemical Stockpile Disposal Program (CSDP) is a U.S. Army program implemented to destroy the nation's stockpile of chemical warfare agents by April 29, 2007. The Newport Chemical Agent Disposal Facility (NECDF) was designed and built to neutralize the chemical nerve agent VX.

This low-temperature and low-pressure neutralization process is different from the baseline technology of incineration previously selected by the Army in that it uses chemical reactors instead of incinerators. Thus, it was necessary to develop new competencies within the Newport government team responsible for the oversight of the systems contractor tasked with destruction of the chemical weapons. The government team decided to formalize a qualification and certification process to develop and test these competencies.

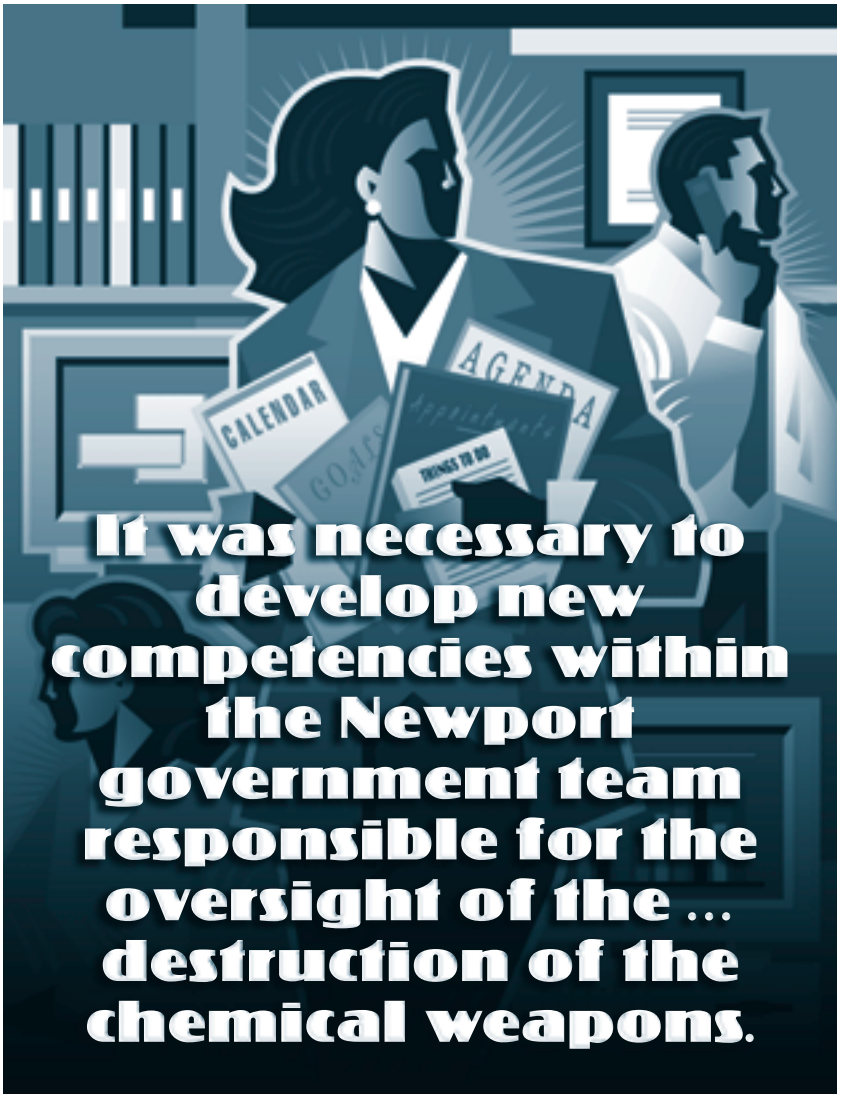
Qualification and Certification Process

The qualification and certification process provided a common method to ensure consistent oversight at the government operations field site by all government employees and oversight support contractors. It was also intended to provide documentation proving that government field office personnel were adequately trained to conduct effective oversight of the government operations plant. The process is designed to transition an individual with a general background in industrial plant operations into a highly trained oversight employee. Completion of the following seven phases is required for certification:

- Oversight training
- Qualification training
- Required reading
- Critical systems demonstration
- Oversight effectiveness training
- Oral board completion
- Management signoff.

Oversight Training

This course introduced the requirements and expectations of the oversight and further described the three-step process towards conducting effective oversight. The first



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step involved the preparation necessary for determining the specific areas to be observed. The second step involved the actual observations, using 18 areas specified in the *2001 Department of Energy (DOE) Conduct of Operations for DOE Facilities* manual, which is considered to represent best management practices for government operating plants (see sidebar "Government Oversight Checklist"). The third step was the feedback generated from the observations, especially to the operators being assessed.

The oversight process was reinforced through the use of a case study and practical exercise. The case study was a thorough examination of historical and other public documents involved in the 1984 methyl isocyanate release at the Union Carbide plant in Bhopal, India. The practical exercise involved an actual assessment of a task being performed at the government field site on the day of the course.

The course also reviewed the U.S. Chemical Safety and Hazard Investigation Board's investigation of the hazards actually experienced within the chemical industry. Successful completion of the 12-hour course included attendance at the classroom lessons and field exercises, and completion of the case study homework and the practical exercise. Other individuals, such as system contractor personnel, were allowed to audit this course to understand the processes being used to conduct oversight at the site.

The most interesting part of the course was the case study assignment, which was designed to focus upon a chemical industry accident. Applicable documents from different sources were given to the students in an effort to get them to look at situations from different perspectives. To complete the case study assignment, students were required to do the following, citing the sources and rationale for each answer:

- Describe what led up to the accident.
- Identify the major contributors to the accident.
- Describe the root cause or reason for the accident.
- Identify six lessons learned from the accident.
- Using the DOE Conduct of Operations philosophy, assess the situation at the time of the accident for 18 listed areas.
- Explain public beliefs about the accident; identify the sources of information that were credible and those that were not; explain which source the student believed.
- Describe personal and professional lessons learned from the case study, and explain its impact upon the student's abilities to perform oversight.

Qualification Training

This combination of classroom training and field exercise training is designed to give students an understanding of such plant systems as chemical reactors, bulk storage, utilities, heating and ventilation, and fire protection. Students learned plant processes and procedures, such as lockout/tagout (LOTO), emergency response, and hazardous waste management. This is the same training that the systems contractor uses to train its operations workforce, ensuring that the government oversight personnel have the same knowledge of the facilities as the workers.

Required Reading

Each government oversight person is required to read several key documents and verify completion and understanding. The documents include plans, such as the government field office oversight plan; procedures, such as accident reporting and investigative procedure; and programs, such as the chemical personnel reliability program. Included within this reading list are the major documents that the systems contractor personnel use.

Critical Systems Demonstration

Each government oversight person is required to demonstrate operations familiarity through a walkdown of the facility. This is necessary to ensure that the oversight personnel know how the operations process functions and how the operations workers carry out their responsibilities. During the demonstration, the individual is asked to physically locate key systems and specific pieces of operating or safety equipment and is required to answer questions relating to functions and performance details of the systems or equipment.

Oversight Effectiveness Training

To ensure that oversight activities are executed in a consistent manner from shift to shift, government oversight personnel participate in a series of roundtable training and discussion sessions that focus on the details of the Conduct of Operations topics introduced through the oversight training. Each session results in the preparation of guidelines that individuals place into a reference book

Government Oversight Checklist

- Management Accountability
- Shift Routines
- Control Activities
- Communications
- On-Shift Training
- Emergency Response
- Notifications
- Equipment Status
- Safety
- Verifications
- Log-Keeping
- Operations Turnover
- Unique Processes
- Required Reading
- Timely Orders
- Procedures
- Operator Aids
- Equipment Labeling