NUCLEAR CRITICALITY SAFETY ORGANIZATION
GUIDANCE FOR THE DEVELOPMENT OF
CONTINUING TECHNICAL TRAINING

K. J. Carroll

R. G. Taylor

C. A. Worley

Nuclear Criticality Safety Organization

RECEIVED
JUN 08 1998
OSTI

May 20, 1997

MASTER
LHC

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

Prepared by the
Oak Ridge Y-12 Plant
Oak Ridge, Tennessee 37831
managed by
Lockheed Martin Energy Systems, Inc.
for the
U. S. DEPARTMENT OF ENERGY
under contract
DE-AC05-84OR21400

831273

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

LOCKHEED MARTIN ENERGY SYSTEMS, INC.

**GUIDANCE FOR THE DEVELOPMENT OF
CONTINUING TECHNICAL TRAINING**

NUCLEAR CRITICALITY SAFETY ORGANIZATION (NCSO)

Approvals:

Qualification Verification Official:

R. G. Taylor

Manager, NCSO:

[Signature]

TABLE OF CONTENTS

	Approval/Cover Page	1
	Table of Contents	2
1.0	Purpose	3
2.0	References	3
3.0	Scope	3
4.0	Definitions	3
5.0	Content of Continuing Technical Training	4
6.0	Continuing Technical Training Process	5

Table

Table 1 - Recurring Training Topics	6
-------------------------------------	---

Figure

Figure 1 - Continuing Technical Training Process	6
--	---

1 PURPOSE

- 1.1 The Nuclear Criticality Safety Organization (NCSO) is committed to developing and maintaining a staff of highly qualified personnel to meet the current and anticipated needs in nuclear criticality safety at the Oak Ridge Y-12 Plant and throughout the DOE complex. The NCSO Qualification Program is described in Y/DD-694, *Qualification Program, Nuclear Criticality Safety Organization* and in Y/DD-696, *Training Implementation, Nuclear Criticality Safety Organization*.
- 1.2 The Continuing Training Program, as described in Y/DD-694 and TMS Program 5770, is comprised of two major elements: fixed and variable. The fixed component is compliance driven, composed of those LMES courses which have a periodic requalification requirement. The variable component addresses individualized training needs such as specialized LMES or off-site courses for professional development, an IDP, if applicable, and NCSO-wide continuing technical training as needed. *see Y/DD-696 for elements*
- 1.3 Continuing technical training is training outside of the initial qualification program to address identified organization-wide needs. Typically, this training is used to improve organization performance in the conduct of business. It is not a substitute for qualification, but used to emphasize and amplify desired performance methodologies and to assure that existing technical qualifications are maintained current.
- 1.4 This document provides guidelines for the development of the technical portions of the Continuing Training Program. It is not a step-by-step procedure, but a collection of considerations to be used during the development process.
- 1.5 This document is not intended to address changes to the NCSO Qualification Program itself. Should items be identified during the course of developing continuing technical training that indicate the need to change the program, this shall be accomplished in accordance with Y10-027 and through a revision to Y/DD-694 and/or Y/DD-696 as appropriate. Similarly, should the need for changes to NCSO or Y-12 procedures be identified, this shall be accomplished through a revision to the appropriate document.

2 REFERENCES

NOTE: The Nuclear Criticality Safety Organization (NCSO) was previously designated as the Nuclear Criticality Safety Department (NCSD). During the transition period, some references may utilize the old designation.

- 2.1 Y/DD-694, *Qualification Program, Nuclear Criticality Safety Organization*
2.2 Y/DD-696, *Training Implementation, Nuclear Criticality Safety Organization*
2.3 Y/DD-552, *Environmental, Safety, and Health Self-Assessment Program for the Nuclear Criticality Safety Organization*
2.4 Y10-027, *Conduct of Training Procedure*

3 SCOPE

This guideline document is applicable to all technical NCSO personnel, including temporary personnel, sub-contractors and/or LMES employees on loan to the NCSO, who are in a continuing training program as defined in Y/DD-694, *Qualification Program, Nuclear Criticality Safety Organization*.

4 DEFINITIONS

Terms used in this document are defined in Y/DD-694, *Qualification Program, Nuclear Criticality Safety Organization*.

5 CONTENT OF CONTINUING TECHNICAL TRAINING

5.1 The development of the NCSO continuing technical training shall be performed under the direction of the Compliance Group Leader with the approval of the QVO and with the assistance of the TC.

5.2 Sources of training topics

5.2.1 There is no single source for training topics, nor is there a definitive listing of possible sources. The need for training can be identified inside or outside of the NCSO, may result from external or self-generated changes in the way business is conducted, and may occur at any time.

5.2.2 Typical sources of training topics can include:

5.2.2.1 Changes in LMES, Y-12 and NCSO procedures.

5.2.2.2 Changes in DOE Orders and Industry Codes and Standards.

5.2.2.3 Industry and site experience; lessons learned.

5.2.2.4 Client feedback.

5.2.2.5 Deficiency trends.

5.2.2.6 Management self-assessments.

5.2.2.7 Internal and external audits and surveillance.

5.2.3 As a minimum, the sources identified above should be evaluated for potential training activities during the annual self-assessment of training and qualification conducted in accordance with Y/DD-552, *Environmental, Safety, and Health Self-Assessment Program for the Nuclear Criticality Safety Organization*.

5.3 Recurring Technical Training

5.3.1 Recurring technical training is conducted during NCSO technical discussion meetings addressing topics which may not be in response to a specific source, but are significant enough to need periodic reinforcement.

5.3.2 Recurring training needs for the upcoming year shall be evaluated during the annual self-assessment of training and qualification. Topics selected and their frequency shall be documented on a Recurring Training Planning form and approved by the QVO and Organization Manager. An example of the form is provided in Y/DD-696.

5.3.3 Recurring training topics will vary from year-to-year dependent upon the organization needs. Typical topics and frequencies are provided in Table 1 for guidance.

- 5.3.4 Formalized analysis, design, development, implementation, and evaluation of NCSO recurring technical training in accordance with the Y10-027 is not required.

Table 1 - Recurring Training Topics

Topic	Frequency
Conduct of Operations: A broad area, the specific topics should be selected to address emergent issues	Semi-annual
NCS Improvement initiatives: An overview of ongoing and planned initiatives, with detailed discussion of near-term initiatives as necessary	Annual
NCS Evaluation: Led by the ITRB, an overview of common problems and practices.	Semi-annual
NCS External Monitoring: An overview of common deficiencies and practices	Annual
NCS-related procedures: A refresher on the key points of procedures and standing orders which guide day-to-day technical activities including document control and handling.	Annual
Information security: A refresher on the rules and methods used within NCSO for information security.	Annual
Industry highlights: A review of technical NCS topics discussed at recent conferences/industry meetings.	Annual
Emergency Preparedness: A review of the actions required by NCSO personnel	Annual

5.4 Initial Handling of Potential Training Topics (Non-Recurring)

- 5.4.1 Whenever a potential training topic is identified by any NCSO staff member, the Compliance Group Leader shall be notified of the perceived need and source.
- 5.4.2 The Compliance Group Leader, with the approval of the QVO, shall classify the topic as either urgent, routine, or not appropriate for training.
- 5.4.2.1 Continuing training related, urgent: The topic belongs in continuing training and is of such significance that rapid action should be taken. "Rapid" does not necessarily mean immediate, but that the training should be conducted prior to the next scheduled technical discussion meeting.

5.4.2.2 Continuing training related, routine: The topic belongs in continuing training but need not be addressed until the next scheduled technical discussion meeting.

5.4.2.3 Not appropriate for training: The topic is not an appropriate training topic.

5.5 Handling of Urgent Training Topics (Non-Recurring)

5.5.1 Upon classification as an urgent training topic, the Compliance Group Leader, aided as required by the TC, shall develop an action plan to address the topic. The plan shall address the training method to be used and the timing of training.

5.5.2 The selection of the training method should be guided by the complexity of the topic and the impact on the conduct of NCSO activities.

5.5.3 After approval of the plan by the QVO and, if required, by the NCSO Manager, it shall be implemented by the TC.

5.6 Handling of Routine Training Topics (Non-Recurring)

5.6.1 During the annual self-assessment of the qualification program, any topics previously filed as routine should be reevaluated by the Compliance Group Leader and approved by the QVO for inclusion in Continuing Technical training.

5.6.2 In addition to previously identified routine topics, additional topics identified during the annual qualification program self-assessment should be evaluated by the Compliance Group Leader and approved by the QVO for inclusion in Continuing Technical training.

5.6.3 As with urgent training topics, the selection of the training method should be guided by the complexity of the topic and the impact on the conduct of NCSO activities.

6 CONTINUING TECHNICAL TRAINING PROCESS

6.1 The overall continuing technical training process is illustrated as Figure 1. Continuing technical training is implemented through a combination of required reading and/or organization technical discussion meetings. As discussed above, should the need to revise the Qualification Program or any other NCSO or Y-12 procedure be identified, these changes shall be accomplished through a revision of the appropriate document and are not part of the continuing technical training process.

6.2 Classification of the potential training topic

6.2.1 Upon identification of a potential training topic, the Compliance Group Leader should determine the classification of the topic.

6.2.2 Classification is subjective in nature, but as a general rule, anything which changes or clarifies tasks addressed in the qualification program should be considered urgent.

6.2.3 Classification shall be documented on the Continuing Technical Training Plan form and approved by the QVO. An example of the form is provided in Y/DD-696.

6.3 Selection of the training methodology

6.3.1 The selection of the training method should be guided by the complexity of the topic and the impact on the conduct of NCSO activities.

6.3.1.1 Straightforward topics, or those with only a minor impact, may be addressed through required reading.

6.3.1.2 Complex, high impact topics may require an NCSO technical discussion meeting in addition to, or in place of, required reading.

6.3.2 The Compliance Group Leader should select, and the QVO approve the training method.

6.3.3 Any NCSO technical discussion meeting shall also be approved by the NCSO Manager.

6.3.4 Selection shall be documented on the Continuing Technical Training Plan form.

6.4 Implementing and documenting the continuing technical training

6.4.1 For Required Reading, training is implemented through the NCSO Required Reading Program. Completed Required Reading log sheets shall be retained in the NCSO training files.

6.4.2 If the item results in the need for a NCSO technical discussion meeting, meeting attendance sheets shall be retained in the NCSO training files.

6.4.3 As a minimum, even if no high impact or complex topics are identified, at least two NCSO technical discussion meetings shall be held annually addressing recurring training topics to assure that technical qualifications remain current.

Figure 1 - Continuing Technical Training Process