Qualifying as an External Instrument Specialist/Technician at LLE

S. STAGNITTO, M. LABUZETA, AND C. SORCE

University of Rochester, Laboratory for Laser Energetics

Summary

External users must qualify as an Instrument Specialist/ Technician (IS/T) to align, operate, or service equipment

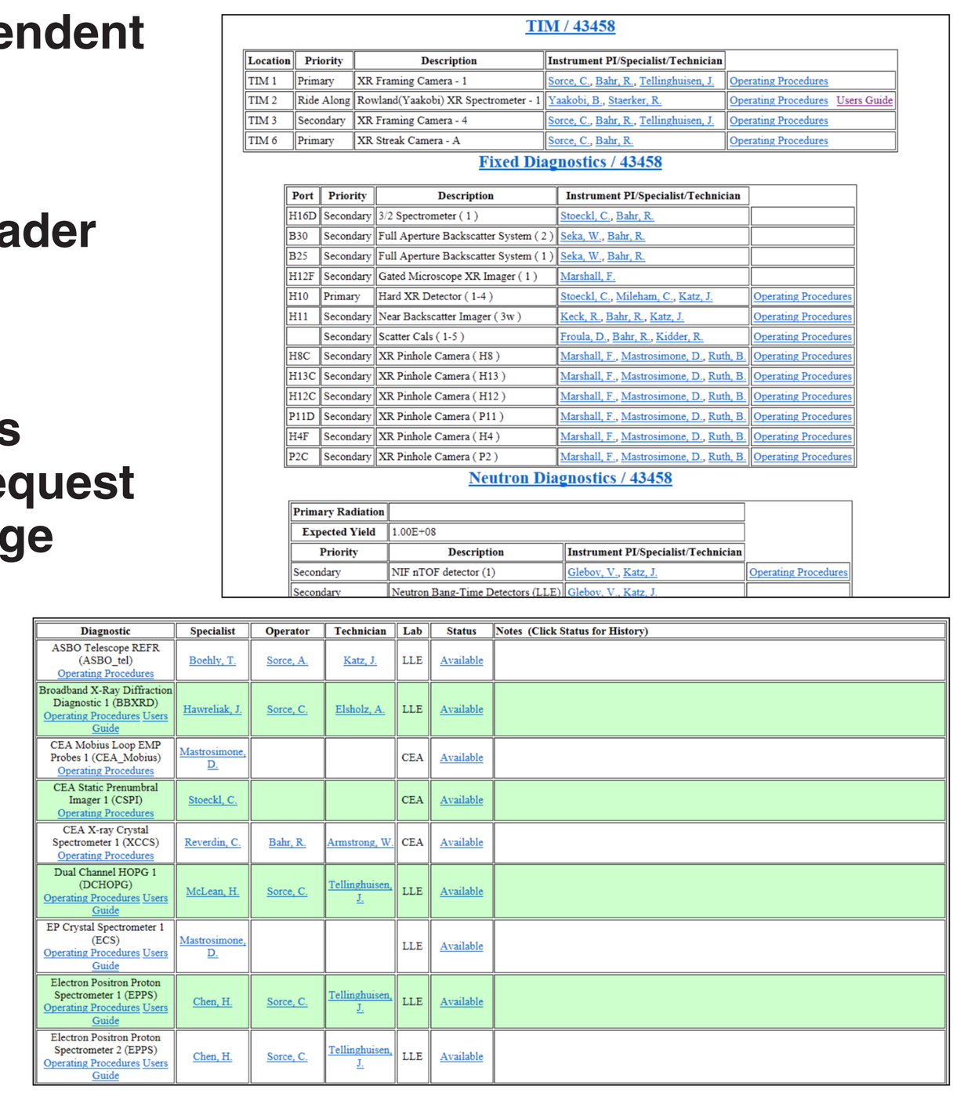
- Sections 2009C and 3009C of the Laser Facility Organization and Regulation Manual (LFORM) detail the qualification requirements
- IS/T qualification procedure is accessible to all users
- LLE safety training for IS/T candidates combines general aspects of the core safety disciplines into a single training module
- The Instrument Principal Investigator and/or the Omega Facility determines who requires IS/T qualification
- Annual refresher training is required for all qualified IS/T's to maintain proficiency

Users must complete the IS/T qualification process and have an "open" work authorization procedure to conduct technical work at LLE.

G9799

IS/T must demonstrate an understanding of instrument operating procedures and engineering design principles

- Each instrument requires independent review from the Instrument PI or Instrument Specialist
- Experimental Support Group Leader confirms understanding of LLE operating procedures
- Instrument operating procedures are available through the shot request form or the diagnostic status page



G9803

Laser Facility Manager(s) and Experimental Support Group Leader certifies IS/T qualification

- Verify all signatures have been obtained on qualification card
- Address any questions or concerns from IS/T
- Update IS/T status, facility access, LFORM, and safety training records in the database

- Annual refresher training is required to maintain proficiency
- Automated email notifications of expiring or expired training will be sent to IS/T's

G9806

Every instrument has an Instrument Principal Investigator, Instrument Specialist, and may have one or more Instrument Technicians

- Instrument Principal Investigator—system expert for a specific instrument who is the point person for administering changes to the design or answering questions on the performance of the instrument
  - normally, the Principal Investigator is the developer for the instrument or a designee of the developer
- Instrument Specialist—one who is qualified by the Instrument Principal Investigator to handle alignment and repairs to the instrument in addition to nominal operations
- Instrument Technician—one who is qualified by the Instrument Principal Investigator or Instrument Specialist to operate/service the instrument for either shot operations or preparations for shot operations

Instrument Specialists/Technicians are administratively qualified by the facility after completing the IS/T qualification card in Sec. 3009C of LFORM.

G9800

The Chief Safety Officer meets with candidates upon arrival to conduct an oral examination and certification of LLE safety policies pertaining to planned activities

Topic	Description	
G_005	Safety Training for Guest Workers at LLE	Quiz
C_002	Beryllium Safety (if required)	Quiz

- General topics from all core safety disciplines are combined into one training module titled "Safety Training for Guest Workers at LLE"
  - covers general laboratory, chemical, electrical, laser, mechanical, and compressed gas
- Beryllium safety training is required for individuals whose activities involve working with beryllium
- Return signed quiz results to LLE
- The Chief Safety Officer will determine if additional safety training is required

G9804a

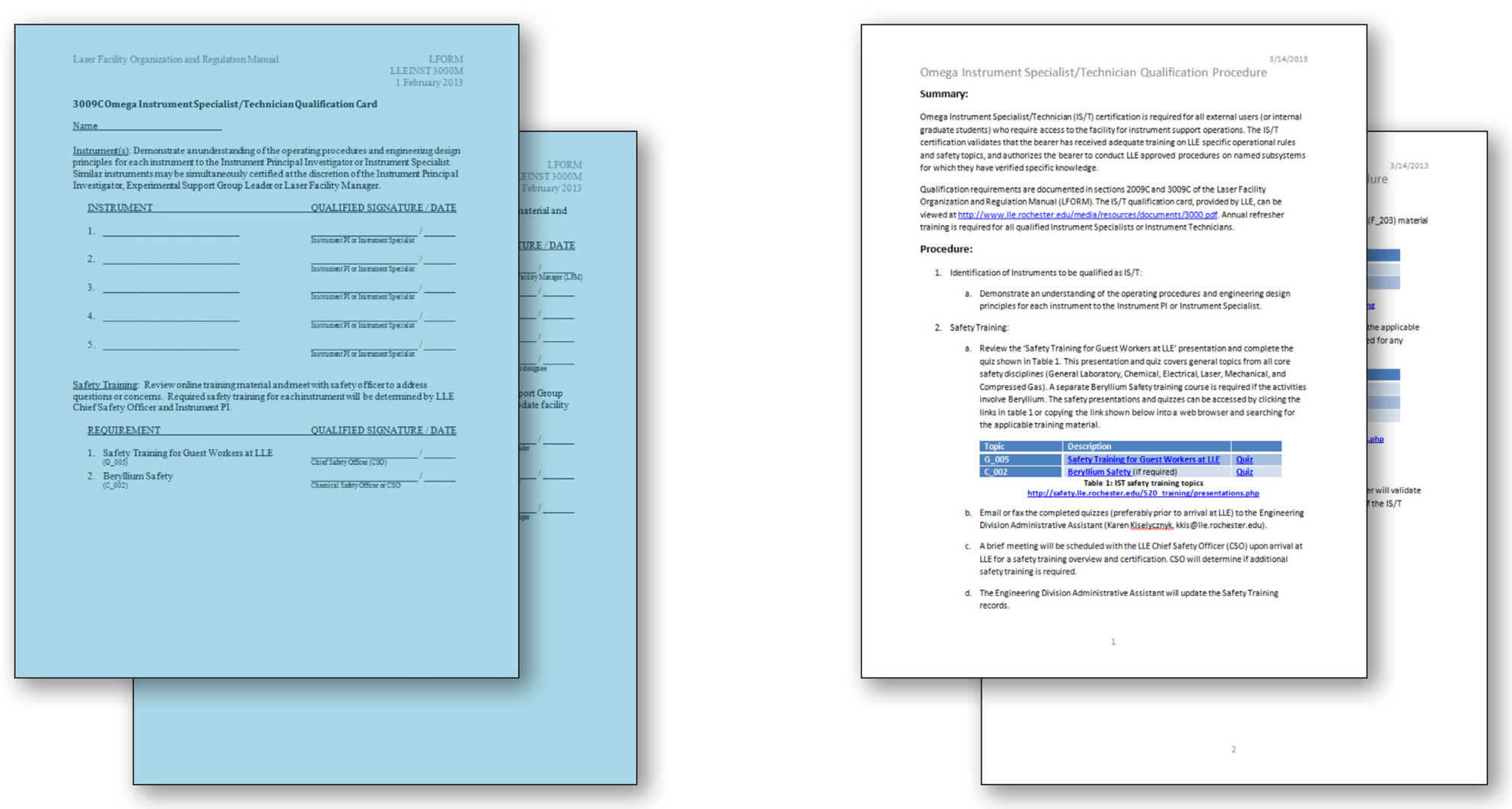
IS/T must review the Work Authorization Procedure (WAP) prior to opening and commencing activities

- Description of work accurately reflects the scope of the activity
- Procedural reference or attached procedure adequately describes the process
- Safety assessment identifies all risks and are suitably mitigated through procedure, personal protective equipment, or other means
- All locations where activities will be performed are identified in the access areas section
- The lead person performing work and the other workers assigned sections are correct

If errors are identified or corrections are necessary, work with the facility to modify the WAP. Do not go beyond the scope of the approved activities.

G9807

IS/T qualification procedure provides guidance to begin the qualification process prior to arrival at LLE



3009C IS/T qual card

IS/T qualification procedure

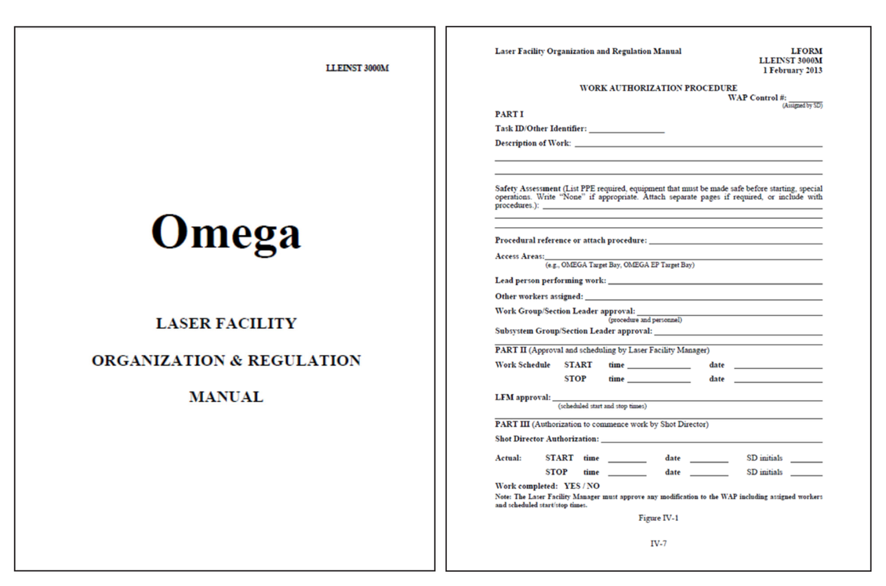
The IS/T qualification procedure is available on the Omega PI portal.

G9802

Facility access and LFORM training is certified by the Laser Facility Manager

Topic	Description
F_200	LFORM Overview
F_202	WAP Training

Topic	Description
F_101	LaCave Access
F_104	Omega Bay Access
F_204	Clean Room Protocol



All facility access and LFORM training modules are available through the Omega PI portal.

G9805a

The lead person identified in the WAP has several critical responsibilities

- Ensuring all personnel listed in the "other workers assigned" section have reviewed the details of the WAP
- Opening the WAP through the on-watch Shot Director
- Providing the on-watch Shot Director with daily updates at the beginning of each day and at the completion of each day's activities
- Closing the WAP through the on-watch Shot Director after ALL activities are complete

G9808

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UR LLE

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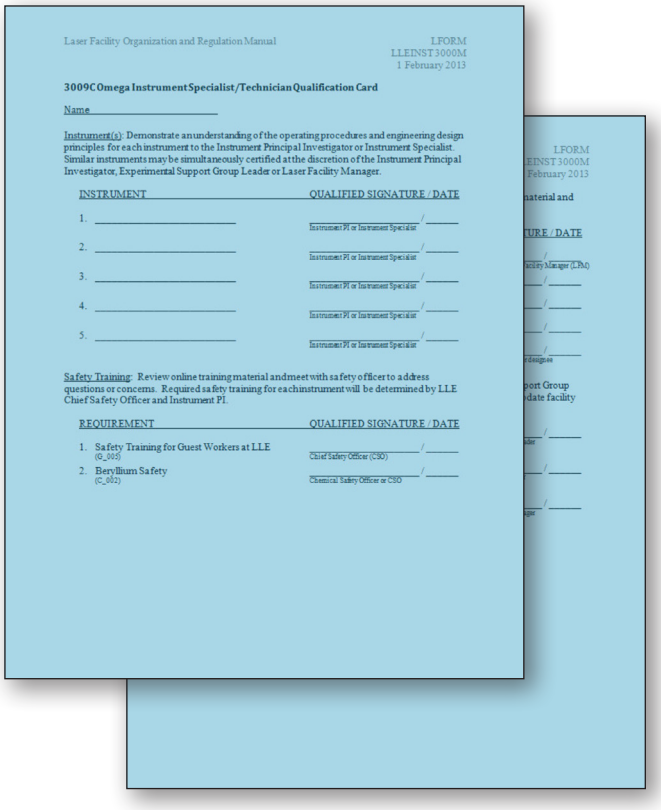
IS/T qualification procedure provides guidance to begin the qualification process prior to arrival at LLE



Laser Facility Organization and Regulation Manual — LFORM LLEINST3000M 1 February 2013

3009C Omega Instrument Specialist/Technician Qualification Card

Name _____

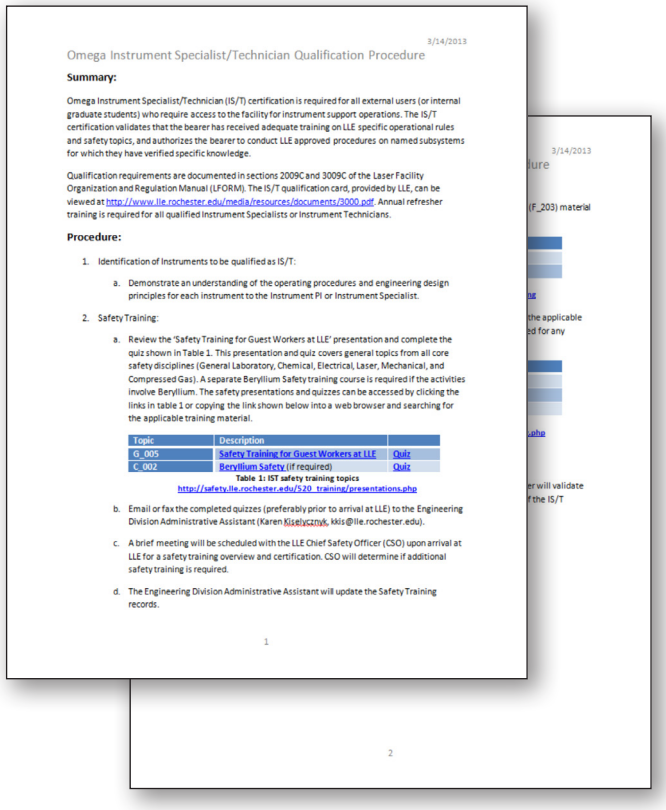
Instrument(s): Demonstrate an understanding of the operating procedures and engineering design principles for each instrument to the Instrument Principal Investigator or Instrument Specialist. Similar instruments may be simultaneously certified at the discretion of the Instrument Principal Investigator, Experimental Support Group Leader or Laser Facility Manager.

INSTRUMENT	QUALIFIED SIGNATURE / DATE
1. _____	_____ / _____ Instrument PI or Instrument Specialist
2. _____	_____ / _____ Instrument PI or Instrument Specialist
3. _____	_____ / _____ Instrument PI or Instrument Specialist
4. _____	_____ / _____ Instrument PI or Instrument Specialist
5. _____	_____ / _____ Instrument PI or Instrument Specialist

Safety Training: Review online training material and meet with safety officer to address questions or concerns. Required safety training for each instrument will be determined by LLE Chief Safety Officer and Instrument PI.

REQUIREMENT	QUALIFIED SIGNATURE / DATE
1. Safety Training for Guest Workers at LLE (G_005)	_____ / _____ Chief Safety Officer (CSO)
2. Beryllium Safety (C_002)	_____ / _____ Chemical Safety Officer or CSO

3009C IS/T qual card



3/14/2013

Omega Instrument Specialist/Technician Qualification Procedure

Summary:

Omega Instrument Specialist/Technician (IS/T) certification is required for all external users (or internal graduate students) who require access to the facility for instrument support operations. The IS/T certification validates that the bearer has received adequate training on LLE specific operational rules and safety topics, and authorizes the bearer to conduct LLE approved procedures on named subsystems for which they have verified specific knowledge.

Qualification requirements are documented in sections 2009C and 3009C of the Laser Facility Organization and Regulation Manual (LFORM). The IS/T qualification card, provided by LLE, can be viewed at http://www.lle.rochester.edu/media/resources/documents/3000.pdf. Annual refresher training is required for all qualified Instrument Specialists or Instrument Technicians.

Procedure:

1. Identification of Instruments to be qualified as IS/T:
   a. Demonstrate an understanding of the operating procedures and engineering design principles for each instrument to the Instrument PI or Instrument Specialist.
2. Safety Training:
   a. Review the 'Safety Training for Guest Workers at LLE' presentation and complete the quiz shown in Table 1. This presentation and quiz covers general topics from all core safety disciplines (General Laboratory, Chemical, Electrical, Laser, Mechanical, and Compressed Gas). A separate Beryllium Safety training course is required if the activities involve Beryllium. The safety presentations and quizzes can be accessed by clicking the links in table 1 or copying the link shown below into a web browser and searching for the applicable training material.

Topic	Description	
G_005	Safety Training for Guest Workers at LLE	Quiz
C_002	Beryllium Safety (if required)	Quiz

Table 1: IST safety training topics
http://safety.lle.rochester.edu/520_training/presentations.php

   b. Email or fax the completed quizzes (preferably prior to arrival at LLE) to the Engineering Division Administrative Assistant (Karen Kiselycznyk, kkis@lle.rochester.edu).
   c. A brief meeting will be scheduled with the LLE Chief Safety Officer (CSO) upon arrival at LLE for a safety training overview and certification. CSO will determine if additional safety training is required.
   d. The Engineering Division Administrative Assistant will update the Safety Training records.

1

2

IS/T qualification procedure

The IS/T qualification procedure is available on the Omega PI portal.

IS/T must demonstrate an understanding of instrument operating procedures and engineering design principles

- Each instrument requires independent review from the Instrument PI or Instrument Specialist
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TIM / 43458

Location	Priority	Description	Instrument PI/Specialist/Technician	
TIM 1	Primary	XR Framing Camera - 1	Sorce, C., Bahr, R., Tellinghuisen, J.	Operating Procedures
TIM 2	Ride Along	Rowland(Yaakobi) XR Spectrometer - 1	Yaakobi, B., Staerker, R.	Operating Procedures Users Guide
TIM 3	Secondary	XR Framing Camera - 4	Sorce, C., Bahr, R., Tellinghuisen, J.	Operating Procedures
TIM 6	Primary	XR Streak Camera - A	Sorce, C., Bahr, R.	Operating Procedures

Fixed Diagnostics / 43458

Port	Priority	Description	Instrument PI/Specialist/Technician	
H16D	Secondary	3/2 Spectrometer (1)	Stoeckl, C., Bahr, R.	
B30	Secondary	Full Aperture Backscatter System (2)	Seka, W., Bahr, R.	
B25	Secondary	Full Aperture Backscatter System (1)	Seka, W., Bahr, R.	
H12F	Secondary	Gated Microscope XR Imager (1)	Marshall, F.	
H10	Primary	Hard XR Detector (1-4)	Stoeckl, C., Mileham, C., Katz, J.	Operating Procedures
H11	Secondary	Near Backscatter Imager (3w)	Keck, R., Bahr, R., Katz, J.	Operating Procedures
	Secondary	Scatter Cals (1-5)	Froula, D., Bahr, R., Kidder, R.	Operating Procedures
H8C	Secondary	XR Pinhole Camera (H8)	Marshall, F., Mastrosimone, D., Ruth, B.	Operating Procedures
H13C	Secondary	XR Pinhole Camera (H13)	Marshall, F., Mastrosimone, D., Ruth, B.	Operating Procedures
H12C	Secondary	XR Pinhole Camera (H12)	Marshall, F., Mastrosimone, D., Ruth, B.	Operating Procedures
P11D	Secondary	XR Pinhole Camera (P11)	Marshall, F., Mastrosimone, D., Ruth, B.	Operating Procedures
H4F	Secondary	XR Pinhole Camera (H4)	Marshall, F., Mastrosimone, D., Ruth, B.	Operating Procedures
P2C	Secondary	XR Pinhole Camera (P2)	Marshall, F., Mastrosimone, D., Ruth, B.	Operating Procedures

Neutron Diagnostics / 43458

Primary Radiation			
Expected Yield	1.00E+08		
Priority	Description	Instrument PI/Specialist/Technician	
Secondary	NIF nTOF detector (1)	Glebov, V., Katz, J.	Operating Procedures
Secondary	Neutron Bang-Time Detectors (LLE)	Glebov, V., Katz, J.	

Diagnostic	Specialist	Operator	Technician	Lab	Status	Notes (Click Status for History)
ASBO Telescope REFR (ASBO_tel) Operating Procedures	Boehly, T.	Sorce, A.	Katz, J.	LLE	Available	
Broadband X-Ray Diffraction Diagnostic 1 (BBXRD) Operating Procedures Users Guide	Hawreliak, J.	Sorce, C.	Elsholz, A.	LLE	Available	
CEA Mobius Loop EMP Probes 1 (CEA_Mobius) Operating Procedures	Mastrosimone, D.			CEA	Available	
CEA Static Prenumbral Imager 1 (CSPI) Operating Procedures	Stoeckl, C.			CEA	Available	
CEA X-ray Crystal Spectrometer 1 (XCCS) Operating Procedures	Reverdin, C.	Bahr, R.	Armstrong, W.	CEA	Available	
Dual Channel HOPG 1 (DCHOPG) Operating Procedures Users Guide	McLean, H.	Sorce, C.	Tellinghuisen, J.	LLE	Available	
EP Crystal Spectrometer 1 (ECS) Operating Procedures Users Guide	Mastrosimone, D.			LLE	Available	
Electron Positron Proton Spectrometer 1 (EPPS) Operating Procedures Users Guide	Chen, H.	Sorce, C.	Tellinghuisen, J.	LLE	Available	
Electron Positron Proton Spectrometer 2 (EPPS) Operating Procedures Users Guide	Chen, H.	Sorce, C.	Tellinghuisen, J.	LLE	Available	

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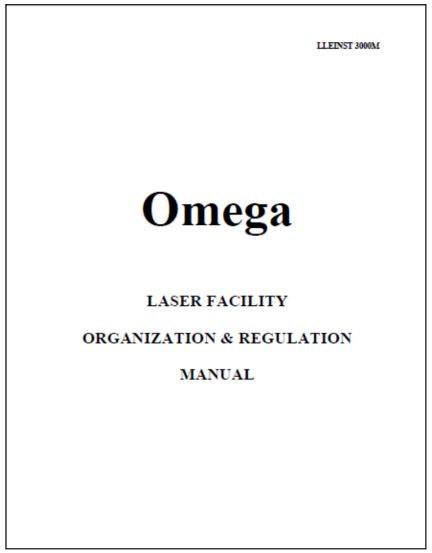


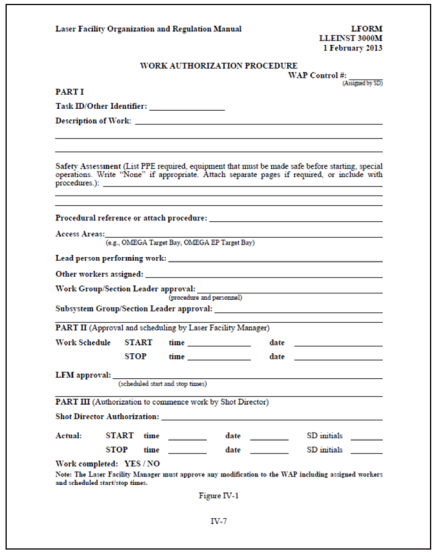
LLEINST 3000M

Omega

LASER FACILITY

ORGANIZATION & REGULATION

MANUAL



Laser Facility Organization and Regulation Manual — LFORM, LLEINST 3000M, 1 February 2013

WORK AUTHORIZATION PROCEDURE

WAP Control #: (Assigned by SD)

PART I

Task ID/Other Identifier:

Description of Work:

Safety Assessment (List PPE required, equipment that must be made safe before starting, special operations. Write "None" if appropriate. Attach separate pages if required, or include with procedures.):

Procedural reference or attach procedure:

Access Areas: (e.g., OMEGA Target Bay, OMEGA EP Target Bay)

Lead person performing work:

Other workers assigned:

Work Group/Section Leader approval: (procedure and personnel)

Subsystem Group/Section Leader approval:

PART II (Approval and scheduling by Laser Facility Manager)

Work Schedule START time date

STOP time date

LFM approval: (scheduled start and stop times)

PART III (Authorization to commence work by Shot Director)

Shot Director Authorization:

Actual: START time date SD initials

STOP time date SD initials

Work completed: YES / NO

Note: The Laser Facility Manager must approve any modification to the WAP including assigned workers and scheduled start/stop times.

Figure IV-1

IV-7

All facility access and LFORM training modules are available through the Omega PI portal.

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