LASER INSTITUTE OF AMERICA

Laser Safety Officer with Hazard Analysis
Daily Agenda

Day 1

I. Welcome & Introductions

II. Introduction to ANSI Z136.1 *Safe Use of Lasers* standard
- a. History and development of ANSI standard
- b. Scope and LSO responsibilities

III. Basic Concepts of Lasers
- a. Properties of light
- b. Geometrical Optics
- c. How does a laser work
- d. Characteristics of laser light
- e. Characterizing the laser output
- f. Categories of laser systems
- g. Laser applications

IV. Laser Bioeffects
- a. Laser effects on the eye and skin

Day 2

I. Laser Bioeffects *(con't)*
- a. Laser effects on the eye and skin

II. Laser Safety Standards for Manufacturers
- a. Comparison of ANSI and CDRH standards
- b. CDRH Federal Laser Product Performance Standard (FLPPS)
- c. IEC standards and CDRH Laser Notice No. 50

III. Laser Hazard Analysis
- a. Review of radiometric terms & units
- b. MPE: Maximum Permissible Exposure
- c. Determination of the MPE
- d. Viewing conditions for determining the MPE
- e. Procedure for determining the ocular MPE
- f. Examples

Day 3

I. **Laser Hazard Analysis *(con't)***
   a. Nominal hazard zone
   b. AEL, and laser hazard classification
   c. Optical density
   d. More Calculations

Day 4

I. **Laser Regulations and Consensus Standards for Laser Users**
   a. OSHA, FDA
   b. FAA
   c. Other ANSI standards
   d. IEC

II. **Non-Beam Hazards**
   a. Non-beam hazards & ANSI Z136.1
   b. Chemical hazards
   c. Physical hazards
   d. Biological hazards
   e. Other non-beam hazards

III. **Laser Accident History**
   a. Who gets injured the most
   b. statistics

IV. **Laser Safety Program Administration**
   a. The Laser Safety Officer (LSO)
   b. Structure of a laser safety program
   c. Laser safety program administration

Day 5 (half-day)

I. **Laser Safety Control Measures**
   a. Engineering control measures
   b. Administrative and procedural control measures
   c. Eye protection
   d. Barriers & curtains

II. **Course Review**
   a. Q & A