Laser Facility Audit

University of Nevada, Reno

Auditor: Myung Chul Jo	Date of Audit:
Laser Location:	PI:
Contact during audit:	

Laser System(s) Information:

		Laser 1	Laser 2	Laser 3
Laser class:				
Laser type (active medium):				
Wavelength (nm):				
Max. Output (J, W):				
CW/pulsed:				
Pulsed laser	Pulse duration			
	Repetition rate			
Beam diameter (mm):				
Beam divergence (mrad):				
Beam Delivery (open, closed):				
Manufacturer:				
Model:				
Serial#:				
Active (inactive):				

Laser Warning Label Posting:

	Title	Y	N	N/A
1	Entry way (4.4.3.5.1.(b)			
2	Laser system (4.4.2.1.5)			
3	Laser aperture (4.4.2.1.5)			
4	Laser status indicator outside room (4.4.2.8.1)			

Laser System Safety Controls:

	Title	Y	N	N/A
5	Protective housing and interlock in place (4.4.2.1, 4.4.2.1.3)			
6	Beam shutter present			
7	Key operation (4.4.2.2)			
8	Laser activation indicator on console, machine and/or laser head			
9	Beam output meter is available			

Engineering Controls:

	Title	Y	N	N/A
10	Laser secured to table			
11	Laser optics secured to table			
12	Service access panels & interlocks (4.4.2.1.4)			

13	Equipment labeling (4.4.2.1.5)				
14	Viewing windows & diffused display screen (4.4.2.3)				
15	Facility windows protection (4.4.2.4)				
16	Laser protective barriers and curtains (4.4.2.5)				
17	Laser beam path (4.3.2.7)	Fully open (4.4.2.7.1)			
18		Limited open (4.4.2.7.2)			
19		Enclosed (4.4.2.7.3)			
20	Area warning devices(4.4.2.8)	Visible (4.4.2.8.1)			
21		Audible (4.4.2.8.2)			
22	Laser radiation emission warning (4.4.2.9)	Visible (4.4.2.9.1)			
23		Audible (4.4.2.9.2)			
24	Laser controlled area (4.4.2.10)	Access/egress during an emergency (4.4.2.10.1)			
25		Emergency stop (4.4.2.10.2)			
26		Entryway controls (4.4.2.10.3)			
27	Laser beam termination point (beam stop, etc.)				

Administrative/procedural Controls and Personal Protective Equipment:

	Title				Y	N	N/A
28	SOP (4.4.3.1)						
29	Alignment procedures (4.4.3.8)						
30	Output emission limitations (4.4.3.2)						
31	Education and training (4.4.3.3.)						
32	Authorized personnel (4.4.3.4)						
33	Spectators and laser controlled areas (4.4.3.7)						
34	Service personnel (4.4.3.9)						
35	Laser eye protection (4.4.4.2.1)	Wavelength	Required OD	Available OD			
36	Emergency contact list posted or available						
37	Proper skin protection						
38	General housekeeping						
39	Reflective materials in beam path						
40	Burn marks						
41	Laser incidents within last 12 months (reports/corrective action available)						
42	Log for laser use, service and maintenance						
43	Laser(s) is(are) registered						

Non-beam Hazards:

	Title		Y	N	N/A
44	Electrical hazard (7.2.1.6)	Uncovered and improperly insulated wires/terminals			
45		Electrical safety training received			
46		Excessive wires on floor			
47		Capacitors, if present, are grounded and discharged			
48	Non-laser radiation (7.2.2)	Ionizing radiation			
49		Optical radiation from laser-material interaction process: UV, blue light, etc.			

50		Microwave, RF, ELF, EMF			
51	Fire hazards, if output is >0.5W/cm^2 (7.2.3)				
52	Explosion hazards (7.2.4): arc lamp, capacitor banks,				
53	Mechanical hazards associated with robotics (7.2.5)				
54	Noise (7.2.6)				
55	Fiber optics fragments hazards (7.2.7)				
56	Nanoparticles (7.2.8)				
57	Laser generated air contaminants (LGAC) (7.3.1)	LGAC expected			
58		Exhaust ventilation			
59		Sensors/alarms, chemical agent control measures			
60	Laser dye and solvent use (7.3.3)	Proper label			
61		Storage			
62		Placed in secondary container			
63		Operating fume hood for dye mixing			
64	Human factors	Ergonomics (7.5.1)			
65		Limited work space (7.5.2)			
66	Use of chiller or cryogens (7.5.5)				

Additional comments or descriptions:

Audited by		Date	