

## Environment, Safety and Health Standards Set for LBNL

1. 07 USC, Chapter 6, 136 et seq., FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act)
2. 07 USC, Chapter 54, 2131-2157, Animal Welfare Act (Transportation, Sale, and Handling of Certain Animals)
3. 15 USC, Chapter 53, 2601-2692, Toxic Substances Control Act
4. 16 USC, Chapter 1, Subchapter LXI, 432 and 433, American Antiquities Act
5. 16 USC, Chapter 1A, Subchapter I, 469(a)(1), and Subchapter II, 470 et seq., National Historic Preservation Act
6. 16 USC, Chapter 1B, Archeological Resources Protection
7. 16 USC, Chapter 1A, Subchapter II, Part A, 470 h-2 Historic Properties Owned or Controlled by Federal Agencies
8. 16 USC, Chapter 5a, 668 et seq. - Eagle Protection Act and Chapter 7, 703 et seq. - Migratory Bird Treaty Act
9. 16 USC, Chapter 35, 1531 et seq., Federal Endangered Species Act
10. 25 USC, Chapter 32, 3001 et seq., Native American Graves Protection and Repatriation
11. 33 USC, Chapter 26, 1311 et seq., Clean Water Act
12. 42 USC, Chapter 82, 6901 et seq., Resource Conservation and Recovery Act (RCRA), as amended
13. 42 USC, Chapter 85, 7401 et seq., Clean Air Act (CAA), as amended
14. 42 USC, Chapter 103, Section 9601 et seq., CERCLA, as amended
15. 42 USC, Chapter 116, 11021-11023, Emergency Planning and Community Right to Know
16. 42 USC, Chapter 133, 13101 – 13109 Pollution Prevention Act of 1990
17. 49 USC, Chapter 51, 5101 et seq., Hazardous Materials Transportation
18. 07 CFR 331, Possession, Use, and Transfer of Select Agents and Toxins
19. 07 CFR 355, Endangered Species, Regulations Concerning Terrestrial Plants
20. 09 CFR, Chapter I, Animal and Plant Inspection Service, Department of Agriculture
21. 09 CFR 121, Possession, Use, and Transfer of Select Agents and Toxins
22. 10 CFR 71, Subparts D,E,F (71.31 – 71.77), Transportation of radioactive materials-package approval
23. 10 CFR 20, Subpart K, Section 20.2005, Disposal of Specific Wastes
24. 10 CFR 20, Subpart K, Section 20.2003, Disposal by Release into Sanitary Sewerage
25. 10 CFR 708, DOE Contractor Employee Protection Program
26. 10 CFR 745, DOE, Protection of Human Subjects
27. 10 CFR 820, Procedural Rules for Department of Energy Nuclear Activities
28. 10 CFR 830, Nuclear Safety Management
29. 10 CFR 835, Occupational Radiation Protection
30. 10 CFR 850, Chronic Beryllium Disease Prevention Program
31. 10 CFR 851, Worker Safety and Health Program

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The following standards are incorporated by reference<sup>1</sup> in 10 CFR 851.

10 CFR 850, Chronic Beryllium Disease Prevention Program Stand

29 CFR 1904.4 – 1904.11, 1904.29 – 1904.33, 1904.44, and 1904.46, Recording and Reporting Occupational Injuries and Illnesses

29 CFR 1910, Occupational Safety and Health Standards, excluding 29 CFR 1910.1096, Ionizing Radiation

29 CFR 1915, Shipyard Employment

29 CFR 1917, Marine Terminals

29 CFR 1918, Safety and Health Regulations for Longshoring

29 CFR 1926, Safety and Health Regulations for Construction

29 CFR 1928, Occupational Safety and Health Standards for Agriculture

ACGIH Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices (2005) when the ACGIH Threshold Limit Values are lower (more protective) than permissible exposure limits in 29 CFR 1910. When the ACGIH TLVs are used as exposure limits, contractors must nonetheless comply with the other provisions of any applicable expanded health standard found in 29 CFR 1910.

ANSI Z88.2, American National Standard for Respiratory Protection (1992)

ANSI Z136.1, Safe Use of Lasers (2000)

ANSI Z49.1, Safety In Welding, Cutting, and Allied Processes, Sections 4.3 and E4.3 (1999)

NFPA 70, National Electrical Code (2005)

NFPA 70E, Standard for Electrical Safety in the Workplace (2004)

ASME Boilers and Pressure Vessel Code, Sections I – XII including applicable Code Cases (2004)

ASME B31, Code for Pressure Piping as follows:

B31.1 (2001), Power Piping

B31.1a (2002), Addenda to ASME B31.1 (2001)

B31.2, Fuel Gas Piping (1968)

B31.3, Process Piping (2002)

B31.4, Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids (2002)

B31.5 (2001), Refrigeration Piping and Heat Transfer Components

B31.5a (2004), Addenda to ASME B31.5 (2001)

B31.8, Gas Transmission and Distribution Piping Systems (2003)

B31.8S, Managing System Integrity of Gas Pipelines (2001)

B31.9, Building Services Piping (1996)

B31.11, Slurry Transportation Piping Systems (2002)

B31G, Manual for Determining Remaining Strength of Corroded Pipelines (1991)

DOE M 231.1-1A, Environment, Safety and Health Reporting Manual (September 4, 2004)

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<sup>1</sup> The version of a standard referenced in 10 CFR 851 may become outdated. LBNL monitors health and safety standards for changes, and as appropriate will list current versions of standards referenced in 10 CFR 851 in its “Sufficient” Work Smart Standards. To the extent that there may be differences between versions, the 10 CFR 851-enforceable versions are those listed below in these “Necessary” Work Smart Standards.

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DOE M 440.1-1A, DOE Explosives Safety Manual, Attachment 2, Contractor Requirements Document (January 9, 2006)
32. 10 CFR 1008, Records Maintained on Individuals (Privacy Act)
33. 10 CFR 1021, National Environmental Policy Act Implementing Procedures
34. 10 CFR 1022, Compliance with Floodplain/Wetlands Environmental Review Requirements
35. 21 CFR, Chapter II, Drug Enforcement Administration, Department of Justice, Controlled Substances
36. 21 CFR 361.1, Radioactive Drugs for Certain Research Uses
37. 29 CFR 1630.13, Prohibited Medical Examinations and Inquiries
38. 29 CFR 1630.14, Medical Examinations and Inquiries Specifically Permitted
39. 36 CFR, National Park Service, Department of the Interior, Parts: 63 – Inclusion in National Register 65 – Historic Landmarks 68 – Preservation of Architectural Integrity 79 – Federally Owned Archeological Collections
40. 40 CFR, Air Programs, Parts: 50 - National Primary and Secondary Ambient Air Quality Standards 54 – Prior Notice of Citizen Suits 60 - Standards of Performance, New Stationary Sources 61 - NESHAPs, applicable subparts 63 – National Emission Standards for Hazardous Air Pollutants for Source Categories 68 - Chemical Accident Prevention Provisions 82 - Protection of Stratospheric Ozone
41. 40 CFR 110, Discharge of Oil
42. 40 CFR 112, Oil Pollution Prevention
43. 40 CFR 116, Designation of Hazardous Substances
44. 40 CFR 117, Determination of Reportable Quantities for Hazardous Substances
45. 40 CFR 122, NPDES System
46. 40 CFR 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants
47. 40 CFR 246, Source Separation for Materials Recovery Guidelines
48. 40 CFR 247, Comprehensive Procurement Guideline for Products Containing Recovered Materials (Federal Agency Recycling Programs)
49. 40 CFR 260 - 279, Hazardous Waste
50. 40 CFR 280, Underground Storage Tanks
51. 40 CFR 300,(CERCLA) National Oil and Hazardous Substances Pollution Contingency Plan
52. 40 CFR 302, (CERCLA) Designation, Reportable Quantities, and Notification
53. 40 CFR 355, Emergency Planning and Notification (SARA Title III)
54. 40 CFR 370, Hazardous Chemical Reporting, Community Right To Know
55. 40 CFR 372, Toxic Chemical Release Reporting, Community Right To Know
56. 40 CFR 401, Subpart N, Effluent Guidelines and Standards, General Provisions

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57.	40 CFR 403, Subpart N, General Pretreatment Regulations for Existing and New Sources of Pollution
58.	40 CFR 433, Metal Finishing Point Source Category
59.	40 CFR 720, Premanufacture Notification
60.	40 CFR 761, Polychlorinated Biphenyls (PCB)
61.	40 CFR 763, Subpart E, U.S. EPA Asbestos-Containing Materials in Schools, Asbestos Hazard Emergency Response Act (AHERA). Reference to asbestos clearance sample limit of less than 70 structures per square millimeter only. Does not include sampling protocol or procedures.
62.	42 CFR 73, Select Agents and Toxins
63.	43 CFR, Part 3 – Preservation of American Antiquities, and Part 7 – Protection of Archeological Resources
64.	43 CFR, Part 10 - Native American Graves Protection and Repatriation Regulations
65.	45 CFR 46, DHHS, Protection of Human Subjects
66.	48 CFR 936.602-70(a)(8), Architect - Engineer Services DOE Selection Criteria, Construction and Architect - Engineer (A-E) contracts
67.	49 CFR 40, Procedures for Workplace Drug Testing Programs
68.	49 CFR, Subtitle B, Other Regulations Relating to Transportation, Chapter I, Research And Special Programs Administration, Department Of Transportation
69.	49 CFR 382, Controlled Substances and Alcohol Use and Testing
70.	49 CFR 397, Subpart D, 101 and 103, Routing of Class 7 Radioactive Materials
71.	50 CFR 17 and 222, Endangered Species Act Rules
72.	50 CFR 402, Endangered Species Act
73.	California Health and Safety Code, Division 20, Chapter 6.95, Article 1, Hazardous Materials Release Response Plans and Inventory
74.	California Health and Safety Code, Division 104, Part 7 (Retail Food Facilities) Chapter 4 (Retail Food Practices-California Uniform Retail Food Facilities Law [CURFFL])
75.	California Public Resources Code, Division 13, California Environmental Quality Act (CEQA), and 14 CCR, Division 6, Chapter 3, Guidelines for Implementation of the California Environmental Quality Act
76.	08 CCR, Division 1, Chapter 4, Subchapter 1, Unfired Pressure Vessel Safety Orders
77.	08 CCR, Division 1, Chapter 4, Subchapter 4, Construction Safety Orders (for all construction safety unless 29 CFR 1926 is more strict)
78.	08 CCR, Division 1, Chapter 4, Subchapter 7, General Industry Safety Orders, Group 3, General Plant Equipment and Special Operations, Article 12, Tree Work, Maintenance or Removal, 3427. Safe Work Procedures
79.	13 CCR Division 2, Chapter 6, Article 3, 1160 – 1167, for activities relating to the offering of hazardous materials for transportation by commercial carriers
80.	17 CCR, Division 1, Chapter 5, Subchapter 4, Group 3, Article 6, Special Requirements for Radiographic Operations, 30330-30337
81.	17 CCR Division 3, Air Resources (stationary and mobile sources)
82.	19 CCR, Division 2, Chapter 4, Hazardous Material Release Reporting, Inventory and Response Plans
83.	19 CCR Division 2, Chapter 4.5, California Accidental Release Prevention Program (Cal ARP)
84.	22 CCR, Division 2, Subdivision 1, Chapter 3, 12000 (c), Chemicals Known to the State to Cause Reproductive Toxicity (consensus listing solely referenced to define reproductive toxins)
85.	22 CCR Division 4.5, Chapter 10, Article 2, 66260.1 et seq., Hazardous Waste Regulation
86.	23 CCR Division 3, Chapter 9, Waste Discharge Reports and Requirements, and Chapter 9.2, Sections 2250,

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2251, 2260, Reportable Quantities and Reporting Requirements, discharges of non-AEA materials to waters of the state
87. 23 CCR Division 3, Chapter 16, Underground Storage Tank Regulations
88. 24 CCR, Building Standards (for facilities design, only), Parts:
. 2 – California Building Code (for fire protection-life safety)
. 3 – California Electrical Code
. 4 – California Mechanical Code
. 5 – California Plumbing Code
. 6 – California Energy Code
. 7 – California Elevator Safety Construction Code
. 9 – California Fire Code (for fire protection-life safety)
. 12 – California Reference Standards Code
89. California Fish and Game Code, 1601-1616, Floodplains and Wetlands
90. California Health and Safety Code, Division 5, sections 5410, 5411, and 5411.5, Reporting discharge of sewage or other waste to waters of the state
91. California Health and Safety Code, Division 20, Chapter 6.5, Hazardous Waste Control
92. California Health and Safety Code, Division 20, Chapter 6.67, Aboveground Storage of Petroleum, to the extent involving discharges or potential discharges to waters of the state
93. California Health and Safety Code, Division 20, Chapter 6.7, Underground Storage of Hazardous Substances
94. California Health and Safety Code, Division 20, Chapter 6.95, Article 2, Hazardous Materials Management
95. California Health and Safety Code, Division 26, Air Resources, California Clean Air Act
96. California Health and Safety Code, Division 104, Part 14, 117600-118360 California Medical Waste Management Act
97. California Labor Code, Division 4, Workers' Compensation and Insurance
98. California Public Resources Code, Division 30, 40000 et seq., California Integrated Waste Management Act of 1989
99. California Vehicle Code, Division 11, Rules of the Road
100. California Water Code, Division 7, Water Quality, to the extent involving discharges or potential discharges of non-AEA materials to waters of the state
101. SWRCB Water Quality Order #2006-003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems
102. SWRCB Water Quality Order #97-003-DWQ, Statewide General Permit Requirements for Stormwater Discharges Associated with Industrial Activity
103. SWRCB Water Quality Order #99-008-DWQ, Statewide General Permit Requirements for Construction Stormwater Discharges
104. DOE O 151.1C, Comprehensive Emergency Management System, Attachment 2, Contractor Requirements Document, as implemented under NFPA 1600
105. DOE O 210.2, DOE Corporate Operating Experience Program
106. DOE O 225.1A, Accident Investigations (Cooperation with DOE investigation only)
107. DOE M 231.1-1A, Environment, Safety and Health Reporting Manual, Attachment 2, Contractor Requirements Document
108. DOE M 231.1-2, Occurrence Reporting and Processing of Operation Information, Attachment 2, Contractor

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109.DOE N 234.1, Reporting of Radioactive Sealed Sources, Attachment 2, Contractor Requirements Document
110.DOE O 414.1C, Quality Assurance, Attachment 1, Contractor Requirements Document
111.DOE O 420.1B, Facility Safety, Attachment 2, Contractor Requirements Document, Chapter II (Fire Protection) and Chapter IV (Natural Phenomena Hazards Mitigation)
112.DOE O 420.2B, Safety of Accelerator Facilities, Paragraph 3C and Contractor Requirements Document
113.DOE O 435.1, Radioactive Waste Management, Attachment 1, Contractor Requirements Document
114.DOE M 435.1-1, Radioactive Waste Management Manual, applicable chapters and sections listed below:  Chapter I: All sections except that DOE orders incorporated by reference are applicable only to the extent they were adopted site-wide in the Berkeley Lab Necessary and Sufficient Set of standards.  Chapter III sections: A and B, D except for (4) relative to disposal facility requirements, F, G, H and I, (J, K, O, and P only when an off-site option for Berkeley Lab TRU waste has been identified by DOE and the off-site facility has established a WAC applicable to Berkeley Lab), L, N(1), N(2), N(3), Q(1), Q(2) except that ventilation exhaust monitoring is limited to MW6 and MW7 as specified in the HWHF SAD  Chapter IV sections: A, B, D, and F, G except for 1(d) relative to disposal facility requirements, H(1), H(2), I, J, K and L, M, N, N(2), O and R(1) except that ventilation exhaust monitoring is limited to MW6 and MW7 as specified in the HWHF SAD
115.DOE O 440.2B, Aviation Management and Safety, Contractor Requirements Document, Parts A and B
116.DOE O 442.1A, Department of Energy Employee Concerns Program, Attachment 1, Contractor Requirements Document
117.DOE O 443.1, Attachment 1, Protection of Human Subjects, except for duplicate reporting requirements already covered in Necessary Standards 10 CFR 745, (DOE) Protection of Human Subjects, and 45 CFR 46, (DHHS), Protection of Human Subjects
118.DOE P 443.1, Protection of Human Subjects, except for duplicate reporting requirements already covered in Necessary Standards 10 CFR 745, (DOE) Protection of Human Subjects, and 45 CFR 46, (DHHS), Protection of Human Subjects
119.DOE O 450.1A, Environmental Protection Program, Contractor Requirements Document
120.DOE P 450.2A, Identifying, Implementing and Complying with Environment, Safety and Health Requirements
121.DOE P 450.4, Safety Management System Policy
122.DOE M 450.4-1, Integrated Safety Management System Manual, Attachment 1, Contractor Requirements Document
123.DOE P 456.1 – Secretarial Policy Statement on Nanoscale Safety
124.DOE O 460.1B, - Packaging and Transportation Safety, Contractor Requirements Document sections:
1
3a, for on site and intra-lab offsite transportation as addressed in TSD
3b and c, for on site transportation as addressed in TSD
4 and 5
7 for on site transportation by complying with TSD
125.DOE O 5400.5, Radiation Protection of the Public and the Environment, Chapter II, paragraphs 1 (not including 1.a.3.c and 1.c), 2, 5, 6 (not including 6.a), 7, and 8.a
126.DOE O 5480.19 Conduct of Operations Requirements for DOE Facilities, paragraph 4
127.DOE-EM-STD-5502-94 Hazard Baseline Documentation

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128. ACGIH Ventilation Manual (Applicable Sections)
129. ANSI N43.2, Sections 6.2.1.1, 6.2.1.2, 6.2.1.3, 6.2.2.1.4, 6.2.2.3, 6.2.2.3.1, 6.2.2.3.3, 6.2.2.3.4, 6.2.2.3.5, 7.5, 8.1
130. ANSI N43.3, Definitions, Sections 4.1, 5.1.1, 5.1.2, 5.1.4, 5.1.6.4, 5.1.5.2, 5.1.5, 7, 9.1, 9.2, 9.4, Annex C
131. ANSI Z133.1-2000, American National Standard for Arboricultural Operations – Pruning, Repairing, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements, Sections 6.7.6 – 6.7.6.11
132. ANSI Z136.2-1997, American National Standard for the Safe Use of Optical Fiber Communication Systems Utilizing Laser Diode and LED Sources
133. ANSI Z358.1-2004, Standard for Emergency Eyewash and Shower Equipment, (Applicable sections). Note: (1) Testing frequency to be quarterly, not weekly; (2) LBNL has NOT adopted provisions in the standard dealing with the temperature of the delivered flushing fluid.
134. ASME B30.2, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist) (2001)
135. ASME B30.17, Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist) (2003)
136. ASME B30.5, Mobile and Locomotive Cranes (2004)
137. ASME B30.9, Slings (2003)
138. ASME B30.10, Hooks (1999)
139. ASME B30.11, Monorails and Underhung Cranes (2004)
140. ASME B30.16, Overhead Hoists (Underhung) (2003)
141. ASME B30.20, Below-the-Hook Lifting Devices (2003)
142. ASME B30.21, Manually Lever Operated Hoists (1999)
143. ASME B56.1, Low Lift and High Lift Trucks (2004)
144. ASME B56.6, Rough Terrain Forklift Trucks (2002)
145. ASME Boiler and Pressure Vessel Code (for non-research applications)
146. Compressed Gas Association (CGA) Pamphlet S - 1.1 and 1.2, Pressure Relief
147. National Fire Protection Association, Applicable National Fire Codes
148. BAAQMD Regulations 1 through 12, BAAQMD Manual of Procedures
149. Title 10, Central Contra Costa Sanitary District Code, Source Control (Pre-treatment)
150. City of Berkeley Municipal Code, Title 15, Chapters 15.04, 15.08, and 15.12, Hazardous Materials Management, to the extent sovereign immunity has been waived by federal act
151. City of Berkeley Municipal Code 16.12.30-32-34, Permits and deposits for well construction, installation, destruction or modification and for soil boring/probe/grab and ground water sampling (except AEA materials)
152. City of Berkeley Municipal Code 17.20, Reduction of Storm Water Pollution (except discharges of AEA materials)
153. City of Berkeley Ordinance 6715, provision prohibiting transportation on specified streets at which Purge Chamber Openings are located
154. City of Berkeley Noise Ordinance, Chapter 13.40 “Community Noise”. Limit to referenced noise levels only
155. East Bay Municipal Utility District (EBMUD) Ordinance No. 311A-03, (except AEA discharges). NOTE: Berkeley Lab annually accepts radiation discharge standards voluntarily
156. Oakland Municipal Ordinance 12024, City of Oakland Creek Protection, Storm Water Management, and Discharge Control Ordinance, (except discharges of AEA materials)
157. Oakland Municipal Code, 8.12.020, Adopting California Health and Safety Code Division 20, Chapter 6.95, Article 2, to the extent involving prevention of accidental releases to air, and to the extent sovereign immunity

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has been waived by federal act
158. City of Oakland Planning Code, Title 17, Performance Standards, Chapter 17.120.050, limited to referenced noise levels in Tables A, B, and C
159. California Emergency Services Act 2006, Article 9.5, Disaster Preparedness, Subsection 8607, Standardized Emergency Management System, where applicable
160. Homeland Security Presidential Directive (HSPD)-5: National Incident Management System
161. California Water Code, 13800 - 13806, State Water Resources Control Board requirement for adoption of Model Well Ordinance by state and local agencies (as applicable at LBNL except AEA materials)
162. LBNL Asbestos Management Program
163. Integrated Worker Health and Safety Program for Beryllium Activities at LBNL, 8/1/2000
164. LBNL Biosafety Manual
165. LBNL Control Procedures for Peroxidizable Compounds
166. LBNL Project and Design Management Procedures Manual, RD 3.22, Lateral Force Design Criteria (Seismic Safety) Rev 9
167. LBNL Fire Protection Program
168. LBNL Health and Safety Manual (Except Chapter 21, Radiation Safety ), PUB 3000
169. United States Housing and Urban Development (HUD), "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing," June 1995  <u>Chapter 12</u> (Paint Removal Methods); Section IV, A-E; and Section V, C. (Note: Excluding references to other HUD Guideline Chapters and work site preparation levels)  <u>Chapter 14</u> (Cleaning). (Note: Excluding references to other HUD Guideline Chapters and reference to containment)  <u>Chapter 15</u> (Clearance). (Note: Excluding Section IV, A-C and Table 15.1; Section V; and Section IX). However, "clearing" work sites following lead related work and applying prescribed clearance levels to work at the Lab will be implemented at the discretion of the Berkeley Lab.
170. U.S. Department of Health and Human Services (HHS), Public Health Service, Centers for Disease Control and Prevention (CDC) and National Institutes of Health (NIH), Biosafety in Microbiological and Biomedical Laboratories (BMBL), 5th Edition, February 20072
171. International Air Transportation Association (IATA) Dangerous Goods Regulations
<b>END OF ES&amp;H STANDARDS FOR LBNL</b>

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<sup>2</sup> As implemented per the revised LBNL Biosafety Manual (projected manual revision completion date of June 30, 2009 as noted in the LBNL Biosafety Program Review Corrective Action Plan, dated 9/5/08.