



Integrated Safety Management Plan for the Accelerator Technology and Applied Physics Division

April 2021

Approved by:

A handwritten signature in cursive script, reading "Cameron Geddes".

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Patricia Thomas, Division ES&H Coordinator

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Introduction to Integrated Safety Management at the Accelerator Technology and Applied Physics Division

Integrated Safety Management (ISM)

ISM is a system developed by the U.S. Department of Energy (DOE) and implemented by its contractors to integrate environmental management and worker health and safety requirements into the planning and execution of work at all levels.

DOE has defined **seven Guiding Principles** that are the fundamental policies for DOE and its contractors to use in the management of Environmental Safety and Health (ES&H), described in detail in **ES&H Manual, Section 1.6**. They are:

- 1) Line Management Responsibility and Accountability for ES&H;**
- 2) Clear Roles and Responsibilities;**
- 3) Competence Commensurate with Responsibilities;**
- 4) Balanced Priorities;**
- 5) Identification of ES&H Standards and Requirements;**
- 6) Establishment of Hazard Controls; and**
- 7) Work is Authorized.**

DOE has defined the following **five Core Functions** for integrated ES&H management that make up the underlying process for any work activity that could affect the public, the workers, and the environment:

- 1) Define the Scope of Work.** Missions are translated into work, expectations are set, tasks are identified and prioritized, and resources are allocated.
- 2) Analyze the Hazards.** Hazards and environmental impacts associated with the work are identified, analyzed, and categorized.
- 3) Develop and Implement Hazard Controls** (including environmental controls). Applicable standards and requirements are identified and agreed upon, controls are established to prevent and/or mitigate hazards, environmental impacts are identified and evaluated for reduction, the ES&H envelope is established, and controls are implemented.
- 4) Perform Work within Controls.** Readiness is confirmed and work is performed within the ES&H envelope established.
- 5) Provide Feedback and Continuous Improvement.** Feedback information on the adequacy of controls is gathered, the efficiency of reducing environmental impacts is researched, opportunities for improving the definition and planning of work are identified and implemented, line and independent oversight are conducted, and, if necessary, regulatory enforcement actions occur.

LBNL's ISM system is described in greater detail in the **Integrated Safety Management Plan for Berkeley Lab**. Each LBNL division has its own ISM Plan to describe how ISM is tailored and implemented for the division's work and hazards.

ISM in the Accelerator Technology and Applied Physics Division (ATAP)

April 2021

Berkeley Lab's ATAP Division invents, develops, and deploys accelerators, photon sources, and technologies to explore and control matter and energy. **ATAP's mission** in the next 10 years is to:

- **Explore the frontiers of accelerator and photon-source science;**
- **Provide powerful new tools to serve the nation's needs; and**
- **Develop the national scientific workforce and educate the next generation – students and postdoctoral researchers.**

To meet this mission, ATAP has established a **strategic plan** with **three pillars**:

1. Pursuing discovery science and delivering technological innovation.

- Next-generation magnets and their components and applications
- Accelerator Science and Technology for the next generation of light sources;
- Ultrafast electron diffraction and its enabling technologies;
- Ultra-compact accelerators and radiation sources for science, security and medical applications: BELLA,, and kBELLA;
- Accelerator controls and instrumentation and novel laser technology;
- High performance computational tools for accelerator modeling;
- Plasma science for accelerators and applications;
- Applications of low-powered ion beams, and micro-electromechanical systems (MEMS) based on ion accelerators;
- Hardware foundations for quantum computing.

2. Strengthening and renewing Berkeley Lab's facilities.

- Advanced Light Source upgrade.

3. Contributing to national and international priorities in areas that capitalize on our unique expertise and capabilities.

- LCLS-II and other free electron laser projects;
- High-luminosity Large Hadron Collider accelerator upgrade project (HL-LHC AUP);
- Facility for Rare Isotope Beams (FRIB) and Electron Cyclotron Resonance (ECR) magnets; and
- Looking toward an Electron-Ion Collider (EIC).

For further information about ATAP Division and its programs, see the ATAP website at: <http://atap.lbl.gov/>. ATAP operations include laboratories, machine and electronics shops, fabrication areas, storage space, and office spaces. The LBNL **Work Planning and Control Activity Manager** database is the primary tool used by ATAP for

describing its authorized scope of work and for identifying the hazards and controls associated with its work activities.

ATAP personnel work with other LBNL divisions and external organizations in several different and often complex ways that require coordination of safety systems, including:

- **Matrixed personnel**
- **Multi-division projects**
- **Multi-organization projects**
- **Shared space**
- **User facilities**
- **Off-site work**

It is the policy of ATAP to conduct all of its operations in a manner that protects the health and safety of employees and the general public and that does not endanger the environment, as defined by the Laboratory's Environment, Health & Safety (EH&S) policies and requirements contained in the **Requirements and Policies Manual (RPM)**, **Environment Safety & Health Manual (ES&H Manual)**, and the **Berkeley Lab Integrated EH&S Management Plan**.

The ATAP ISM Plan has been established to assist in ensuring that the Division's Environment, Safety & Health (ES&H) objectives are met. The ATAP ISM Plan has been divided into modules by topic, to be posted on the ATAP Safety Website for easy access and use. Modules may contain links to key LBNL reference documents and websites. The ISM Plan also includes the ATAP Self-Assessment Plan.

ISM During COVID-19

At this writing, during FY21, LBNL and ATAP are in the midst of a COVID-19 pandemic. The Guiding Principles and Core Functions of ISM remain fully applicable and more important than ever. This new hazard has required new controls, policies, and changes in the way we work as new facts are learned. Important information about working during COVID-19 have been incorporated in this ISM Plan in highlighted sections. For current information about LBNL COVID-19 policies and guidance, ATAP personnel are encouraged to consult the following sources:

- LBNL COVID-19 website: <https://covid.lbl.gov/>
- EHS COVID-19 website: <https://ehs.lbl.gov/coronavirus/>
- ATAP Work Planning and Control Activity AA-0132 COVID-19 Limited Resumption of Operations

ATAP ISM Plan Website Contents

1. Introduction to ISM at ATAP

2. Your ISM Responsibilities

2.1 All ATAP Personnel

2.2 Division Director and Deputies

2.3 Program Heads

2.4 ES&H Operations Committee

2.5 ES&H Coordinator

2.6 Program ES&H Coordinators

2.7 Safety Advisory Committee Representative

2.8 Supervisors and PIs

2.9 Project Leads and Activity Leads

2.10 Shop Managers

2.11 Chemical Owners

2.12 Hazardous Waste Generators

2.13 Electrical Safety and Lockout /Tagout

2.14 Emergency Response

2.15 Building Managers and Emergency Teams

2.16 Area Safety Leaders and Technical Area Work Release

2.17 Matrixed Personnel

2.18 Multi-Division Projects and Multi-Organization Projects

2.19 Shared Spaces

2.20 User Facilities

2.21 Students and Work at UC

2.22 Work Off-Site

2.23 Memoranda of Understanding

3. ATAP Work, Hazards, and Controls

3.1 Integrated Work Planning

3.2 Work Planning and Control Process

3.3 Other Safety Evaluations and Work Authorizations

3.4 Subcontractor and Vendor Oversight

3.5 Hazards, Equipment, and Authorizations Evaluation Form

4. Funding & Resources

4.1 FY21 Funding and Resources

5. ATAP Self-Assessment Systems

5.1 FY21 ATAP Self-Assessment Systems

5.2 Focus Area Self-Assessments

5.2.1 Multi-Division Assessment of COVID-19 Response

5.2.2 FY21 Focus Area Self-Assessment Report [Reserved]

5.3 QUEST [Reserved - to be updated prior to Safety Week]

5.3.1 QUEST Checklist for Offices [Reserved]

5.3.2 QUEST Checklist for Labs [Reserved]

5.3.3 QUEST Checklist for Shops [Reserved]

5.4 BELLA Center Accelerator Safety Self-Assessment Checklist

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