

CONDUCT OF OPERATIONS PROGRAM MANUAL

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INTRODUCTION

The purpose of this document is to provide specific guidance for implementation of the Conduct of Operations into research, scientific, technical and operations activities at LBNL. This document allows the user to reference implementing documents and procedures applicable to LBNL.

The scope of this document is to assemble the best-of-class operating practices by which personnel, LBNL organizations, and subcontractors are expected to perform. The practices in this document supplement other instructions provided in LBNL documents.

LBNL uses an integrated management systems approach to implementing the Conduct of Operations Program. The Conduct of Operations Program complements and is integrated to the maximum extent possible with DOE Order (DOE O) 226.1A, *Implementation of Department of Energy Oversight Policy*; DOE O 414.1C, *Quality Assurance*; and DOE Policy (DOE P) 450.4, *Safety Management System Policy*. In order for the Conduct of Operation program to be successful, feedback and improvement methods must be effectively implemented.

The Office of Contract Assurance (OCA) provides institutional oversight and manages the Conduct of Operations Program. Divisions shall implement the requirements outlined within this program manual.

Conduct of Operations is applied using a graded approach that takes into consideration a number of different aspects including relative importance to safety, safeguards and security; magnitude of hazard involved; lifecycle stage of a facility; programmatic mission of a facility; particular characteristics of a facility and other relevant factors.

Radiological facilities contain quantities of radioactive materials above reportable thresholds defined 40 CFR 302, *Protection of Environment Environmental Protection Agency, Designation, Reportable Quantities, and Notification*, Appendix B.

Accelerator facilities are (accelerators and their operations) or modules thereof, including injectors, targets, beam dumps, detectors, experiments, experimental halls, etc. Types of (particle) accelerators include: cyclotron, linear accelerator, positive-ion accelerator, synchrotron and synchrocyclotron. These facilities are subject to the requirements of DOE O 420.2B Safety of Accelerator Facilities.

Radiological and Accelerator facilities are subject to the maximum level of rigor of application of CONOPS criteria.

Industrial or Administrative facilities may not require the same level of rigor of application of CONOPS as a radiological or accelerator facility, and as such division management will determine which CONOPS criteria applies to these facilities.

The graded approach methodology is applied as outlined in the table below:

Facility Type	CONOPS Determination Evaluation Checklist	CONOPS Applicability Matrix
Nuclear Facilities	X	X
Radiological Facilities	X	X
Accelerator Facilities	X	X
Industrial Facilities	X	DBM
Administrative Facilities	X	--

- = Requirement Not Required
 X = Requirement to be Satisfied
 DBM = Determined by Management

The LBNL Conduct of Operations Program Manual will be reviewed when conditions require changes in this document and at least every three years. LBNL will submit significant changes to this Program Manual for review and approval in accordance with DOE Order (DOE O) 422.X. The revision of this manual will be managed and documented utilizing the LBNL Regulations and Procedure Manual (RPM) process.

The Radiation Protection Group in conjunction with the accelerator program division is responsible for identifying which devices meet the requirements for consideration under DOE O 420.2B, and those which are excluded and may be managed by the institutional radiation protection program (RPP).

To determine applicability of the CONOPS criteria, divisions, in conjunction with OCA and Environment, Health and Safety (EH&S), shall complete Attachment 2, *CONOPS Evaluation Form* during work planning activities for construction of a new facility or modification of an existing facility. If completion of Attachment 2 indicates that CONOPS is applicable to a facility, the divisions shall complete Attachment 3, *LBNL CONOPS Applicability Matrix*, to reflect their compliance status with the applicable CONOPS criteria.

Performance of this program manual generates the following records to be maintained in accordance with the requirements outlined in the Regulations and Procedures Manual (RPM) and LBNL/PUB-3111, *Operations and Quality Management Plan*:

- Approved CONOPS Evaluation Forms
- Institutional and Facility Specific Applicability Matrices

2.0 REFERENCES

2.1 Baseline Documents

- DOE O 420.2B, Accelerator Safety Order
- DOE O 422.X *Conduct of Operations*
- DOE STD 1027-92 CN1 xxxxxxxx

2.2 Referenced Documents

- 40 Code of Federal Regulations (CFR), *Protection of the Environment*, Subpart 302, *Safety and Health Reporting*
- DOE O 226.1A, *Implementation of Department of Energy Oversight Policy*
- DOE O 231.1A, Change 1, *Environment, Safety and Health Reporting*
- DOE O 414.1C, *Quality Assurance*
- DOE P 450.4, *Safety Management System Policy*
- *Regulations and Procedures Manual*
- LBNL/PUB-3000, *Environment, Health and Safety Manual*
- LBNL/PUB-3111, *Operations and Quality Management Plan*
- LBNL/PUB-5519 (1), *Issues Management Program Manual*
- LBNL/PUB-5519 (2), *Root Cause Analysis Program Manual*

3.0 ORGANIZATIONS AND ADMINISTRATION (Chapter 1 of the Applicability Matrix)

The Division Director will identify a Cognizant Manager (CM) who is responsible for implementation of Conduct of Operations for a specific or a group of facilities. The CM may identify Operational Team Leads (OTLs) who are responsible for ensuring that their employees, subcontractors and matrixed staff conduct work in a safe manner and that off-normal occurrences are reported to the appropriate level of management for investigation, reporting and mitigation. All LBNL employees and subcontractors are required to conduct work in a safe manner and report off-normal occurrences to management.

The OTL/CM is responsible for ensuring that self-assessments of operations are performed to foster improvement. Worker feedback and operating experiences (e.g. lessons learned and best practices) will be incorporated into the work planning processes in support of continuous improvement.

4.0 SHIFT ROUTINES AND OPERATING PRACTICES (Chapter 2 of the Applicability Matrix)

LBNL operations will be in accordance with approved procedures and will be performed by qualified personnel. The OTL/CM will ensure that personnel are qualified to perform their assigned duties.

The OTL/CM will ensure that no employee is permitted to assume their duties and responsibilities, in support of LBNL operations, if it is obvious that the person is not alert, coherent, or capable of performing the requirements of the position.

When an unexpected event or series of events occurs or when the cause and consequences cannot be readily determined, the situation will be investigated and appropriate action taken before resuming operation. The OTL/CM and operators are responsible and accountable for the operations conducted during their shift. They will be cognizant of the status of all equipment, and records of respective work areas.

Work that violates prescribed safe work practices must be stopped and the situation immediately reported to OTL/CM. Planning for safety is the responsibility of all employees. Compliance with applicable safety standards and/or precautions will be maintained at all times and is an expectation of employment at LBNL. Safety precautions may be posted, be described, or referenced in job-specific procedures or work instructions.

Operators will conduct and document a thorough inspection of all areas within their responsibility at a periodicity specified by the OTL/CM or as identified in internal implementing documents. Equipment will be inspected to ensure that the equipment is operating properly and, for standby equipment, to verify that it is fully operable (i.e., able to perform its intended function).

A fundamental principle of safe facility operation is to believe the indications. LBNL personnel will:

- Assume that the alarm condition, gauge reading, meter reading, analytical result, etc., is accurate, unless proven otherwise.
- Appropriate response action will be taken. The results of the action will be reported to the appropriate facility personnel.

The OTL/CM is responsible for identifying authorized personnel who can operate and/or reset tripped devices, equipment, or systems.

5.0 CONTROL AREA ACTIVITIES (Chapter 3 of the Applicability Matrix)

Control Areas, when required, will be established by the OTL/CM. Access to Control Areas will be limited to persons who need to be in Control Areas on official business. Only those activities essential to supporting operations and activities authorized by management will be conducted in Control Areas.

The operators within a Control Area will be alert and attentive to control panel indications and alarms. The Control Area Operators will take prompt action to determine the cause and to correct abnormalities.

Duties assigned to operators should not interfere with their ability to monitor parameters. The administrative work load of operators responsible for monitoring and operating control areas will be minimized.

Written material that does not relate to operations such as entertainment devices, radios, televisions, tape players, and computer games, etc., should not be used by on-duty operations personnel.

Only persons authorized by the OTL/CM will operate Control Area equipment. Trainees, when allowed to operate Control Area equipment, will be supervised and controlled properly by the operator who would normally perform the evolutions.

6.0 COMMUNICATIONS (Chapter 4 of the Applicability Matrix)

Emergency and normal communications systems will be used during operations. Operators will be instructed on when to use emergency versus normal communication methods. These communications will be tested on a periodicity specified by the OTL/CM of a facility or the Institution.

Emergency communications will be delivered to all affected personnel in a timely manner and in a clear, concise manner. When personnel are working in areas where emergency notifications cannot be heard, alternate methods for alerting these persons will be used:

- The OTL/CM will provide the appropriate notification methods for their responsible areas, including oral communications.
- Operators will ask for clarification of any communication that is not understood.

If abbreviations or acronyms are used, they are will defined and clearly understood.

7.0 CONTROL OF TRAINING DURING WORK ACTIVITIES (Chapter 5 of the Applicability Matrix)

Qualification and training is based on LBNL/PUB-3000 and implementing procedures specific to facilities. LBNL personnel will receive orientation, training, and qualification necessary to achieve initial and maintain proficiency prior to performing operations.

On-the-Job-Training (OJT) Instructors must be qualified in the areas in which they will be instructing and will be designated in writing. Selection of OJT Instructors will take into account communication skills, technical knowledge, and ability to instruct trainees properly.

The OJT Instructor or qualified operator will ensure that the trainee is supervised at all times. The OJT Instructor or qualified operator must be able to stop the trainee from performing tasks incorrectly or unsafely at all times.

Trainees will not be allowed to perform any tasks within their qualification areas unsupervised and will not leave the immediate supervised area of the OJT Instructor or other qualified operator while working on qualifications.

The qualification program will be approved by the authority in accordance with facility-specific procedures. Completion of OJT will be documented in accordance with facility-specific procedures.

8.0 INVESTIGATION OF ABNORMAL EVENTS, CONDITIONS AND TRENDS (Chapter 6 of the Applicability Matrix)

Employees, supervisors, and subcontractors are required to perform their job duties and responsibilities in a safe and environmentally responsible manner; however, if they create or witness an adverse event or condition in the course of performing work, they must immediately report the event or condition to their OTL/CM, their division management, or any other technical or management individual who has responsibility and/or technical knowledge to stabilize the occurrence or condition.

The investigation and analysis process is used to gain an understanding of the event, its causes, and the corrective actions necessary to remedy the problem and to prevent recurrence. The rigor and scope of any event investigation and causal analysis are based on the significance category of the event. The Office of Contract Assurance (OCA) must be contacted to provide assistance and/or technical guidance for all investigations and causal analyses. Environmental, Health and Safety (EH&S) subject matter experts may also be involved to provide technical analysis. Trained and experienced investigators and analysts are available to participate in higher-category occurrences that require trained root cause analysis personnel.

9.0 NOTIFICATIONS (Chapter 7 of the Applicability Matrix)

Reporting requirements of this section are covered by LBNL/PUB-3000, Chapter 15, *Occurrence Reporting*; LBID-2488, *Occurrence Reporting and Processing System (ORPS)*; and LBNL/PUB-5519 (1), *Issues Management Program Manual*. Requirements for performance of formal Root Cause Analysis and Extent of Condition Reviews are identified in LBNL/PUB-5519 (1) and LBNL/PIB-5519 (2), *Root Cause Analysis Program Manual*.

After discovery of the abnormal event is completed, the affected division, with support from ES&H and/or OCA, must determine if the event is reportable to DOE under ORPS or the Price Anderson Amendment Act (PAAA).

After categorizing the event as reportable, LBNL must notify DOE of the event. The division that has responsibility for the event will contact the ORPS Coordinator in the EHS Division, the PAAA Coordinator in the EHS Division and the Office of Contract Assurance (OCA), and ES&H Division Director for any event that may be a Type A or B incident for technical guidance with regard to notification.

10.0 CONTROL OF EQUIPMENT AND SYSTEM STATUS (Chapter 8 of the Applicability Matrix)

Responsibility for maintaining proper configuration and authorizing changes to equipment and systems rests with the management of a particular facility. Initial design and modifications to already-existing equipment will adhere to a documented configuration management program and personnel performing will have access to applicable engineering documents.

LBNL personnel will monitor the equipment and systems of their assigned area, especially after starting components, to assure proper operation. When changing the operational status of equipment/systems and anticipated results are not received, the operator will:

- STOP WORK and inform the OTL/ CM.
- Take necessary action to restore the equipment/system to a proper operating status or place it in a safe operating condition.
- Place the equipment or system in a safe condition and obtain direction from the OTL/ CM before proceeding if an unexpected result occurs while performing an operating procedure.

Equipment nonconformance's are identified, segregated, and dispositioned to ensure that only correct and functional items are used in systems, structures and components. The results of the disposition on equipment nonconformances are documented.

Equipment that has been maintained will be tested prior to returning to operational service.

11.0 LOCKOUT AND TAGOUTS (Chapter 9 of the Applicability Matrix)

LOTO is required whenever service, maintenance, or modification is being performed on equipment or apparatus in which the unexpected energization or start-up of the equipment, or the release of stored energy, could cause injury to people or damage to equipment.

A documented equipment-specific LOTO procedure must be developed and used whenever equipment or apparatus undergoing servicing, modification, or maintenance:

- Has more than one hazardous energy source, or
- Requires the operation of more than one device to isolate the hazardous energy, or
- Has potential for stored, residual, or accumulated hazardous energy.

All requirements of this section are covered by LBNL/PUB-3000, Chapter 18, Lockout/Tagout and Verification, and applicable facility- and equipment-specific LOTO procedures.

12.0 INDEPENDENT VERIFICATION (Chapter 10 of the Applicability Matrix)

The OTL/CM is responsible to identify those structures, systems, and components that require independent verification; and document the methods for performing independent and dual concurrent verification, as applicable.

13.0 LOG KEEPING (Chapter 11 of the Applicability Matrix)

Logbooks may be used at facilities. Log keeping will not take precedence over the safe operation of the facility. Procedural requirements for control of Notebooks and Logbooks are specified in facility-specific procedures. Completed Logbooks (LBs) will be managed in accordance with the RPM and/or facility-specific procedures.

The logbook is a hard copy or electronic media. The LB is considered a Quality Assurance (QA) record and will be controlled by the OTL/CM in accordance with the RPM and/or internal facility-specific procedures. LBs will be uniquely identified. When not in use, the LB will be stored in a manner to prevent theft, deterioration or loss of information.

Information will be recorded in a timely fashion to prevent incomplete or inaccurate entries which will be made in a manner that can be easily read and understood and contain as much significant information as possible to make event and history reconstruction possible.

Corrections to logbook entries will be made by placing a single line through the incorrect entry without obliterating the prior entry and writing the correct entry in a nearby available space. Corrections will be initialed and dated.

The OTL/CM will, as applicable, review, sign, and date the logbook.

14.0 TURNOVER AND ASSUMPTIONS OF RESPONSIBILITIES (Chapter 12 of the Applicability Matrix)

Divisions with shifts will document and implement turnover requirements.

15.0 CONTROL OF INTERRELATED PROCESSES (Chapter 13 of the Applicability Matrix)

Divisions will document and control their interrelated process, (e.g. rad protection services, industrial hygiene services, and engineering services). Documentation may include formal work authorizations, memoranda of understanding/agreements or other mechanisms.

16.0 REQUIRED READING (Chapter 14 of the Applicability Matrix)

Divisions will assign required reading for indoctrination and continuous work performance (e.g. modification to procedures, operator aids, formal work authorization, etc.) as applicable. Completed required reading will be documented.

17.0 TIMELY INSTRUCTIONS/ORDERS (Chapter 15 of the Applicability Matrix)

Instruction/orders, also known as standing orders, when used, provide a means to communicate direction to operators. This direction may be short-term or long-term depending on the situation as evaluated by the OTL/CM. Information such as special operations, data collection, plotting process parameters, special reviews, or other similar matters may be included in standing orders. Standing orders will not be used to deviate from approved procedures. However, standing orders may supplement approved procedures with new and/or additional requirements. Standing orders may be technical or non-technical. Technical standing orders pertain to direction or clarification given to the physical operation of an activity. Timely instructions/orders will be documented prior to execution.

18.0 PROCEDURES (Chapter 16 of the Applicability Matrix)

Operating procedures are developed, reviewed, and approved to provide appropriate direction to ensure that the facility is operated safely. Approved procedures should be used to support safe operation of the facility.

Documented procedures will be developed for work processes within a facility, and will be reviewed and approved by the designated authority as identified in facility-specific procedures. Modifications to a procedure are subject to review and approval.

Procedures will be technical accurate and a consistent format and use of terms will be used. Only controlled or working (a copy of a controlled copy that has been verified correct) copies of procedures will be used by operators to ensure that the procedures are up to date with all procedure change notices and revisions.

Procedures will be adhered to at all times. As the sole exception to this requirement, operators may take whatever action is necessary during emergency conditions to place the facility in a safe condition and to protect equipment, personnel, and public safety without first initiating a procedure change.

If, in the opinion of the operator, a procedure cannot be performed as written, the system or component will be placed in a safe condition and LBNL management informed so the discrepancy can be corrected. Procedures have been prepared anticipating facility condition.

19.0 OPERATOR AIDS (Chapter 17 of the Applicability Matrix)

Operator Aids, when used, will provide information useful to operators in performing their duties. Operator Aids may be in many forms such as, the latest revision of pages out of procedures, handwritten notes, and information tags. Operator Aids will be viewed as a convenience to the operator, not administrative/technical requirements and/or direction. Specifically, Operator Aids may supplement approved procedures, but will not be used in lieu of approved procedures.

Operator Aids may be reviewed by the OTL/CM to verify they meet the criteria identified herein before they are executed. Divisions will have a change control process for operator aids.

Operator Aids and OTL/CM Operator Aid Reviews will be maintained as records in accordance with the RPM.

20.0 EQUIPMENT LABELING (Chapter 18 of the Applicability Matrix)

Divisions will identify equipment and components that are required to be labeled and will have a documented configuration control process in place.

ATTACHMENT 1 - DEFINITIONS

Assessment	The act of reviewing, inspecting, testing, checking, conducting surveillances, auditing or otherwise determining and documenting whether items, processes or services meet specified requirements Assessments are performed by or for management.
Cognizant Manager	A manager that is directly responsible for task products and services.
Corrective Action	Measures that are taken to rectify issues (nonconformance's or noncompliance's) and, where necessary, to prevent recurrence.
Document	Written or pictorial information that describes, specifies, reports or certifies activities, requirements, procedures or results.
Facility	Any equipment, structure, system, process, or activity that fulfills a specific purpose. Examples include, but are not limited to, testing laboratories, research laboratories, accelerator activities, radioactive waste disposal systems, environmental restoration activities and administrative activities. LBNL facilities can be grouped into Nonreactor Nuclear, Radiological, Accelerator, Industrial or Administrative Facilities.
Facility, Accelerator	Facilities that contain apparatus that accelerates charged particles to high energies and direct them against various targets. Accelerator facilities are (accelerators and their operations) or modules thereof, including injectors, targets, beam dumps, detectors, experiments, experimental halls, etc. Types of (particle) accelerators include: cyclotron, linear accelerator, positive-ion accelerator, synchrotron and synchrocyclotron. These facilities are subject to the requirements of DOE O 420.2B Safety of Accelerator Facilities.
Facility, Administrative	Facilities that contain administrative or office buildings and associated service, storage and parking facilities for LBNL Site personnel. These buildings may include factory-built, modular, or portable units, stand alone storage and parking facilities. Administrative space refers to a variety of spaces including: meeting spaces, reception, office support spaces, work rooms, storage rooms, file rooms, mail rooms, copier areas, service units/coffee bar, and telecommunications, computer equipment rooms, cafeteria, and guard houses. The activities performed by personnel in the administrative facilities consists of the performance or management of LBNL business, project management, engineering and site operations activities.

ATTACHMENT 1 - DEFINITIONS

<p>Facility, Industrial</p>	<p>Facilities that may contain radioactive materials that do not meet or exceed the reportable thresholds defined in Appendix B to 40 CFR 302. Industrial facilities comprise of buildings, structures, and other real property, and machinery, equipment, furniture, and fixtures or any part or accessory whether completed or in the process of construction comprising an integrated whole, the primary purpose and use of which is:</p> <ol style="list-style-type: none"> 1) The engaging in a high-technology activity; 2) The manufacturing of goods or materials; 3) The processing of goods and materials by physical or chemical change; <p>Industrial Space refers to a variety of spaces including: research and development laboratories, shops, assemble and storage Areas, shipping and receiving, chemical and gas storage containers.</p>
<p>Facility, Nonreactor Nuclear</p>	<p>Are facilities with activities or operations that involve radioactive and/or fissionable materials in such a form and quantity that a nuclear hazard potentially exists to the employees or the general public. Incidental use and generation of radioactive materials in facility operation (e.g., check and calibration sources, use of radioactive sources in research and experimental and analytical laboratory activities, electron microscope, and X-ray machines) would not ordinarily require the facility to be included in this definition.</p> <p>Transportation of radioactive materials, accelerators and reactors and their operations are not included.</p> <p>Included are activities or operations that:</p> <ol style="list-style-type: none"> 1) Produce, process, or store radioactive liquid or solid waste, fissionable materials, or tritium; 2) Conduct separations operations; 3) Conduct irradiated materials inspections, fuel fabrication, decontamination, or recovery operations; 4) Conduct fuel enrichment operations; 5) Perform environmental remediation or waste management activities involving radioactive materials; or 6) Design, manufacture, or assemble items for use with radioactive materials and/or fissionable materials in such a form or quantity that a nuclear hazard potentially exists. (10 CFR 830.3)
<p>Facility, Radiological</p>	<p>Facilities that contain radioactive materials that do not meet or exceed the hazard category 3 threshold quantity values published in DOE-STD-1027-92 but still contain quantities of radioactive materials above the reportable thresholds defined in Appendix B to 40 CFR 302.</p>

ATTACHMENT 1 - DEFINITIONS

Graded Approach	<p>A process by which the level of analysis, documentation, and actions necessary to comply with the requirements of this part are commensurate with specified factors, that may include:</p> <ol style="list-style-type: none"> 1) The relative importance to safety, safeguards, and security; 2) The magnitude of any hazard involved; 3) The life cycle stage of a facility; 4) The programmatic mission of a facility; 5) The particular characteristics of a facility; and 6) Any other relevant factor. (10 CFR 830.3)
Items	<p>An all inclusive term used in place of any of the following: appurtenance, assembly, component, equipment, material, module, part, structure, subassembly, subsystem, system, unit, support system or data.</p>
Procedure	<p>A document that specifies or describes how an activity is to be performed. The term “procedure” also includes instructions and drawings</p>
Process	<p>A series of actions that achieve an end or result.</p>
Qualification (Personnel)	<p>The characteristics or abilities gained through education, training, or experience, as measured against established requirements such as standards or tests, which qualify an individual to perform a required function.</p>
Records	<p>Books, papers, maps, photographs, machine readable materials or other documentary materials, regardless of physical form or characteristics, made or received by an agency of the United States Government under Federal law or in connect with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations or other activities of the government or because of the informational value of the data they contain.</p>
Testing	<p>An element of verification to determine the capability of an item to meet specified requirements or processes that facilitate the collection of data in conducting scientific investigations by subjecting the item or environment to a set of physical, chemical, environmental or operating conditions.</p>

ATTACHMENT 2 – CONOPS EVALUATION FORM

Initiator Name: _____		Date: _____	
Facility: _____		Building (s): _____	
Organization: _____			
Complete the evaluation form by answering each question. Add comments as necessary.			
No	Question	Answer	Comments
1.	<p>Is the facility one which only involves administrative activities as defined by the Facility Type Definitions?</p> <p>If yes, a Facility-specific CONOPS Applicability Matrix is not required. Identify all the buildings that are in the area of jurisdiction in the Comments field. GO TO question #11 and follow the instructions to complete this Form. If no, go to question # 2.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2.	<p>Is the facility a Haz Cat 2 or 3 nuclear facility as defined by the Facility Type Definitions?</p> <p>If yes, the facility must comply with DOE O 422.C and a Facility-specific CONOPS Applicability Matrix must be completed. GO TO question # 11 and complete the form. If no, go to question # 3.</p> <p>Contact the Radiation Protection Group (RPG) for technical guidance on this question.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.	<p>Is the facility an accelerator with external/ extractable beam, multiple points of entry, users, and active safety systems as defined by the Facility Type Definitions?</p> <p>If yes, the facility must comply with DOE O 422.C and a Facility-specific CONOPS Applicability Matrix must be completed. GO TO question # 11 and complete the form. If no, go to question # 4.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4.	<p>Is the facility a radiological facility as defined by the Facility Type Definitions?</p> <p>If yes, the facility must comply with DOE O 422.C and a Facility-specific CONOPS Applicability Matrix must be completed. GO TO question # 11, and complete the form. If no, go to question # 5.</p> <p>Contact the Radiation Protection Group (RPG) for technical guidance on this question.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5.	<p>Is the dose at the site boundary 10 millirems or greater due to normal operation of the facility?</p> <p>If yes, determine what DOE O 422.C criteria are applicable, if any, and develop a Facility-specific CONOPS Applicability Matrix, if applicable. GO TO question # 11, and complete the form. If no, go to question # 6.</p> <p>Contact the Radiation Protection Group (RPG) for technical guidance on this question.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6.	<p>Could an incident cause the dose to release concentrations at the site boundary to exceed 1 rem?</p> <p>If yes, determine what DOE O 422.C criteria are applicable, if any, and develop a Facility-specific CONOPS Applicability Matrix, if applicable. GO TO question # 11, and complete the form. If no, go to question # 7.</p> <p>Contact the Environmental Services Group (ESG) for technical guidance on this question.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	

ATTACHMENT 2 – CONOPS EVALUATION FORM

No.	Question	Answer	Comments
7.	<p>Could an incident cause the chemical to exceed the American Industry Hygiene Association's emergency response planning guidelines for ERPG-1?</p> <p>If yes, determine what DOE O 422.C criteria are applicable, if any, and develop a Facility-specific CONOPS Applicability Matrix, if applicable. GO TO question # 10, and complete the form. If no, go to question # 8.</p> <p>Contact the Industrial Hygiene (IH) group for technical guidance on this question.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8.	<p>Is the facility a site-wide essential utility or monitoring system with a centralized control function (e.g. sanitary and waste water treatment, telecommunications, security alarms, fire alarms, environmental monitoring)?</p> <p>If yes, determine what DOE O 422.C criteria are applicable, if any, and develop a Facility-specific CONOPS Applicability Matrix, if applicable. GO TO question # 11, and complete the form. If no, go to question # 8.</p> <p>Contact the Facilities organization for technical guidance on this question.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9.	<p>Is the facility (organization) one that provides security or emergency services (e.g. Fire Department and Security Protective Forces)?</p> <p>If yes, determine what DOE O 422.C criteria are applicable, if any, and develop a Facility-specific CONOPS Applicability Matrix, if applicable. GO TO question 11, and complete the form. If no, go to question # 10.</p> <p>Contact the Security and Emergency Management organization for technical guidance on this question.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10.	<p>Is the facility a site-wide or line organization essential computer facility whose failure would have a significant impact on either operations or research (e.g. NERSC, IT Networks)?</p> <p>If yes, determine what DOE O 422.C criteria are applicable, if any, and develop a Facility-specific CONOPS Applicability Matrix, if applicable. GO TO question # 11, and complete the form. If no, go to question # 11.</p> <p>Contact the Information Technology (IT) Division for technical guidance on this question.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
11.	<p>Is an Applicability Matrix required?</p> <p>An Applicability Matrix is a crosswalk between the criteria of CONOPS and the documents that show how the designated facility is implementing them.</p> <p>If yes, GO TO question 12, and complete the form. If no, complete the form by obtaining the appropriate review and approval.</p> <p>Contact the Office of Contract Assurance (OCA) for technical guidance.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
12.	<p>What type of Applicability Matrix is required?</p> <p>A full Applicability Matrix is one where a Facility documents how all applicable elements of CONOPS are being implemented.</p> <p>A partial Applicability Matrix in one where a designated Facility documents how specific elements, of CONOPS, if any, are being implemented.</p> <p>Complete the form by obtaining the appropriate review and approval.</p>	<input type="checkbox"/> Full <input type="checkbox"/> Partial	

Review and Approval

Prepared by: _____ Date: _____
 (Print/Sign Name)

Approved by: _____ Date: _____
 (Division Director, Print/Sign Name)

Approved by: _____ Date: _____
 (Division Director, Print/Sign Name)

ATTACHMENT 3 – COMPLETING THE LBNL CONOPS APPLICABILITY MATRIX

Field	Completion Instructions
Bldg. No.	Identify the building number(s) of the facility for which the Applicability Matrix is being completed.
Facility Name	Identify the name of the facility (e.g. HWHF, LOASIS, Substation 1, etc.).
Responsible Division	Identify the Division who is responsible for, owns and/or manages the facility.
Prepared by	Identify and print the name of the individual who prepared the Applicability Matrix.
Date	Identify the date the individual prepared the Applicability Matrix.
Approved by	Identify, print the name and obtain a signature of the individual who approved the completed Applicability Matrix.
Date	Identify the date the matrix was approved.
Completing the Matrix (General Information)	For each chapter’s criteria, refer to the applicable section in the CONOPS Program Manual for a description of what will be addressed. Additional guidance may be found in the DOE Standard identified at the end of the brief description for each chapter.
Applicability Code	<p>Identify the most appropriate Applicability Code for each criterion. The applicability codes are as follows:</p> <p>N/A – used when the criteria are not applicable or there is very limited applicability to the facility or functions and/or activities performed within or by the facility.</p> <p>LA – used when the criteria are have limited applicability to the facility or functions and/or activities performed within or by the facility.</p> <p>GA – used when the criteria are generally applicable to the facility or functions and/or activities performed within or by the facility.</p>

ATTACHMENT 3 – COMPLETING THE LBNL CONOPS APPLICABILITY MATRIX (CONT.)

Field	Completion Instructions
Identify Compliance Documentation	<p>Identify all facility or project-specific implementing documents (Tier 3) and/or institutional documents (Tier 2), as appropriate, that show how the facility is compliant with each criterion.</p> <ol style="list-style-type: none"> 1. If the criterion is NA, do not identify any document. 2. If the criterion is LA, identify the facility/project-specific documents. If a facility/project-specific implementing document should exist but does not, then the Division must identify it as a Gap (see Compliance Status below). <i>Note: IF a facility/project-specific implementing document does not exist AND it has been determined by the facility’s management that one is not required to be developed but the facility/project performs work in accordance with an institutional (Tier 2) document, THEN identify the institutional (Tier 2) document(s)</i> 3. If the criterion is GA, identify all of the applicable facility/project-specific implementing documents.
Compliance Status	<p>Identify the status of the facility with the criteria.</p> <ol style="list-style-type: none"> 1. If the criteria is not applicable to the facility, then type “N” in the column. 2. If the criteria are applicable to the facility, the facility is fully compliant with the criteria and there are no identified gaps, then type “C” in the column. 3. If the criteria are applicable to the facility but the Division has identified gaps (e.g. a documented work process does not exist but should or an implementing document does not address all of the applicable criteria), then type “G” in the column. (See below for guidance on identifying a plan to address identified gaps.)
Gap, Responsible Person(s), Projected/Completed Date, Comment	<p>This column may be used for general comments and/or to identify gaps in compliance and the Division’s plan to address those gaps.</p> <p>If there is a gap identified, identify the gap, the action that will resolve the gap, the responsible person assigned to resolving the gap and the projected/completion date.</p>

ATTACHMENT 4 - LBNL CONOPS APPLICABILITY MATRIX

Bdg. No. _____ Facility Name: _____ Responsible Division: _____ Organization: _____

Prepared by: _____ Date: _____
 (print name)

Approved By: _____ Date: _____
 (print name/Signature)

- ¹ Applicability Codes: NA – Functional area has none or very limited applicability to the facility or functions and/or activities performed within or by the facility
 LA – Functional area has limited application to the facility or functions and/or activities performed within or by the facility. Requires that the facility address with Tier 3 documents (e.g. facility/project-specific implementing documents) and/or LBNL Tier 2 documents (e.g. institutional documents such as PUB 3000, ESH Manual or other policy/program manual), where appropriate
 GA – Function area has general applicability to the facility or functions and/or activities performed within or by the facility. Requires that facility address with Tier 3 documents (e.g. facility/project-specific implementing documents)
- ² LBNL T2 Only – Check if the limited applicability is sufficiently addressed by LBNL Tier 2 documents (e.g. institutional documents such as PUB 3000, ESH Manual or other policy/program manual)
- ³ Status Codes: N – Not Applicable, C – Compliant, G – Gap Exists

Chapter 1. Organization & Administration		Establishing written standards; periodically monitoring & assessing of performance; and holding personnel accountable for their performance are primary to achieving effective control of activities. [DOE-STD-1032-92, <i>Guide to Good Practice for Operations Organization and Administration</i>]		
Describe overall applicability to Building/Facility/Organizational Unit				
Performance Criteria	Applicability Code (NA, LA, or GA)	Identify Compliance Documentation	Compliance Status (N, C, or G)	Gap, Responsible Person(s), Projected/Completion Date, Comment
1.1 Organizational roles, responsibilities, authority, and accountability				
1.2 Management and worker accountability for the safe performance of work				
1.3 Measureable, realistic, and challenging goals to achieve continuous improvement in the safe				

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performance of work				
1.4 Self assessment of operations				
1.5 Methods for the analysis of hazards and implementation of hazard controls in the work planning and execution process				
1.6 Worker involvement in the work planning process				
Chapter 2. Shift Routines and Operating Practices	Sets the standards for professional behavior of personnel to ensure appropriate attention to activities. [DOE-STD-1041-93, <i>Guide to Good Practice for Shift Routines and Operating Practices</i>]			
2.1 Professional and disciplined operator performance of duties				
2.2 Prompt notification to operating personnel and supervisors of changes in the facility status, abnormalities, or difficulties encountered in performing assigned tasks				
2.3 Adherence by operating personnel and other workers to established requirements				
2.4				

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<p>Awareness by operating personnel of the status of equipment through inspection, conducting checks, and tours of equipment and work areas</p>				
<p>2.5 Procedures for completing round sheets or inspection logs, responding to abnormal conditions, and periodic supervisory reviews of round sheets or inspection logs</p>				
<p>2.6 Response to instrument indications, including the use of multiple indications to obtain parameters</p>				
<p>2.7 Resetting protective devices</p>				
<p>2.8 Authorization to operate facility equipment</p>				
<p>Chapter 3. Control Area Activities</p>	<p>A control area is defined as an area where operations are monitored and equipment adjustments can be made by actual adjustments of controls or by communicating to other personnel who then make the necessary adjustments. [DOE-STD-1042-93, <i>Guide to Good Practice for Control Area Activities</i>]</p>			

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<p>3.1 Formality and discipline in the control and at-the-controls areas</p>				
<p>3.2 Control-area access</p>				
<p>3.3 Surveillance of control panels</p>				
<p>3.4 Alertness and focus on assigned duties</p>				
<p>3.5 Minimizing potentially disruptive devices (e.g. televisions, non-work related reading materials, etc.)</p>				
<p>3.6 Limitation of the number of concurrent evolutions and duties</p>				
<p>3.7 Operation of control area equipment and timely response to determine and correct the cause of abnormalities/out-of-specification conditions</p>				
<p>Chapter 4. Communications</p>	<p>Accurate communications are essential for safe & efficient operations. [DOE-STD-1031-92, <i>Guide to Good Practice for Communication</i>]</p>			

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<p>4.1 Provision of audible and visual communications systems for emergency and normal operations</p>				
<p>4.2 Periodic testing of emergency and normal communication systems</p>				
<p>4.3 Timely communications during emergencies</p>				
<p>4.4 Distinction between emergency and normal communications</p>				
<p>4.5 Control of communications equipment, including the public address system and radio use</p>				
<p>4.6 Use of oral instructions and communications, including use of repeat-backs and sender/receiver identifications</p>				
<p>4.7 Use of abbreviations and acronyms</p>				
<p>Chapter 5. Control of Training during Work Activities</p>	<p>This criterion applies where hands-on training must be performed on the actual equipment during operation and could affect facility safety. [DOE-STD-1040-93, <i>Guide to Good Practice for Control of On-Shift Training</i>]</p>			

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<p>5.1 Supervision and control of personnel under instruction by qualified personnel</p>				
<p>5.2 Facility conditions and controls for conducting training during operational activities</p>				
<p>5.3 Instructor/evaluator qualification requirements</p>				
<p>5.4 Authorization and documentation of training during operational activities</p>				
<p>5.5 Suspension of training during unanticipated or abnormal events</p>				
<p>Chapter 6. Investigation of Abnormal Events, Conditions and Trends</p>	<p>Appropriate manager should investigate & document the significant aspects of all abnormal events (and “near misses”). [DOE-STD-1045-93, <i>Guide to Good Practice for Notifications and Investigation of Abnormal Events</i>]</p>			

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6.1 Thresholds for determining abnormal events, conditions, and trends				
6.2 Identification and investigation of abnormal events, conditions, and trends				
6.3 Implementation of an effective corrective action management process				
6.4 Implementation of a continuous improvement process				
Chapter 7. Notifications	Notification of appropriate DOE personnel or other agencies, when required. [DOE-STD-1045-93, <i>Guide to Good Practice for Notifications and Investigation of Abnormal Events</i>]			

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<p>7.1 Notification of contractor line management and support organizations</p>				
<p>7.2 Notification of DOE/NNSA</p>				
<p>7.3 Notification of external agencies required by regulation</p>				
<p>7.4 Notification time requirements</p>				
<p>7.5 Notification documentation requirements</p>				
<p>Chapter 8. Control of Equipment and System Status</p>	<p>Administrative program to control configuration changes to equipment or facility resulting from maintenance, modifications, or testing activities. [DOE-STD-1039-93, <i>Guide to Good Practice for Control of Equipment and System Status</i>]</p>			
<p>8.1 Maintaining facility and equipment configuration in accordance with procedures, design documents, or other requirements</p>				

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8.2 Initial system alignment and maintaining control of equipment and system status through startup, operation, and shutdown				
8.3 Evaluation and approval of equipment status changes				
8.4 Communication of status of equipment and systems				
8.5 Evaluation and control of the installation and removal of temporary modifications				
8.6 Status of safety basis activities, such as surveillance requirements and system operability				
8.7 Management of equipment deficiencies, maintenance activities, and post-maintenance testing prior to return to service				
8.8 Restoration of facility/equipment status following abnormal/emergency events				
8.9 Configuration control and distribution of engineering documents				

Chapter 9. Lockout and Tagouts	Tagging or locking to protect personnel from injury, protect equipment from damage, and maintain operability of systems. [DOE-STD-1030-96, <i>Guide to Good Practice for Lockouts and Tagouts</i>]			
9.1 Roles and responsibilities associated with the development, documentation, review, installation, and removal of a lockout/tagout				
9.2 Compliance with Occupational Safety and Health Administration Rules 29 CFR 1910 and/or 29 CFR 1926 requirements for the protection of workers using Lockout/Tagout				
9.3 Compliance with National Fire Protection Association Standard 70E electrical safety requirements using Lockout/Tagout				
9.4 Description and control of the tags, locks, lockboxes, chains, and other components utilized for the lockout/tagout program				
9.5 Roles and responsibilities associated with the development, documentation, review, installation, and removal of caution tags to convey operational information or equipment alignments for protection of equipment				
9.6 Description and control of the tags				
9.7				

Measures to prevent relying on caution tags for personnel protection				
Chapter 10. Independent Verification	Checking a component position independently of activities related to establishing the components position. [DOE-STD-1036-93, <i>Guide to Good Practice for Independent Verification</i>]			
10.1 Methods for performing independent verification				
10.2 Structures, systems, and components requiring independent verification				
10.3 Situations requiring independent verification				
10.4 Situations, if any, allowing dual concurrent verification				
10.5 Methods for performing dual concurrent verification, if used.				
Chapter 11. Log keeping	A narrative log of the facilities status and all events needed to provide an accurate history of facility. [DOE-STD-1035-93, <i>Guide to Good Practice for Logkeeping</i>]			

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<p>11.1 Narrative logs at all key positions, as defined by management, for the recording of pertinent information</p>				
<p>11.2 Prompt and accurate recording of information</p>				
<p>11.3 Type, scope, and format for log entries</p>				
<p>11.4 Method for recording late entries and correcting erroneous entries without obscuring the original entry</p>				
<p>11.5 Periodic supervisory reviews for accuracy, adequacy, and trends</p>				
<p>11.6 Document retention requirements</p>				
<p>Chapter 12. Turnover and Assumption of Responsibilities</p>	<p>This requirement applies where turnover of operations occurs on a routine basis or workers/supervisors must change during operations. [DOE-STD-1038-93, <i>Guide to Good Practice for Operations Turnover</i>]</p>			

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<p>12.1 Define all key positions requiring a formal turnover process</p>				
<p>12.2 Turnover of equipment/facility status, duties, and responsibilities that results in the safe and effective transfer of equipment status and in-progress or planned activities from one shift or workgroup to the next</p>				
<p>12.3 Process for reliefs during a shift</p>				
<p>Chapter 13. Control of Interrelated Processes</p>	<p>This criterion applies to interrelated processes that may affect operations. [DOE-STD-1037-93, <i>Guide to Good Practice for Operations Aspects of Unique Processes</i>]</p>			
<p>13.1 Defined responsibilities with respect to the control of interrelated processes (Processes or activities that can affect operations, but are under the control of persons other than the affected operators, such as shared support systems or special testing)</p>				
<p>13.2 Operator training and qualification to understand interrelated processes, to interpret parameters, and provide timely corrective action for process-related problems</p>				
<p>13.3 Establish lines of communication between operating personnel, process support personnel, and other interrelated process operators for coordination of activities</p>				
<p>Chapter 14.</p>	<p>This criterion applies to areas where a formal program is used to make personnel aware of important information. [DOE-</p>			

Required Reading	STD-1033-92, <i>Guide to Good Practice for Operations and Administration Updates Through Required Reading</i>			
14.1 Identify material to be distributed via required reading				
14.2 Identify which personnel are required to review specific required reading				
14.3 Establish criteria for completion and documentation of completed reading				
Chapter 15. Timely Instructions/Orders	This criterion applies to operations that use short-term instructions (such as standing orders) concerning routine or special operations. [DOE-STD-1034-93, <i>Guide to Good Practice for Timely Orders to Operators</i>]			
15.1 Appropriate circumstances for the use of timely instructions/orders				
15.2 Designated levels of review and approval prior to issuance				
15.3 Configuration control of timely instructions/orders				
15.4 Distribution of timely instructions/orders to appropriate personnel and documentation of their receipt and understanding				
Chapter 16. Procedures	Procedures provide specific direction within a facility during normal, abnormal and emergency conditions. [DOE-STD-1029-92, <i>Writer's Guide For Technical Procedures</i>]			

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<p>16.1 A process for development, review, validation/testing and approval of new procedures</p>				
<p>16.2 A process for procedure revisions</p>				
<p>16.3 A process for training personnel on new or revised procedure</p>				
<p>16.4 Procedure detail sufficient for accomplishing the operation</p>				
<p>16.5 Technically accurate procedures capable of performance as written</p>				
<p>16.6 Consistent format and use of terms (e.g. prerequisites, warnings, cautions, notes, hold points, etc.)</p>				
<p>16.7 Periodic review of all current approved procedures</p>				
<p>16.8 Availability and use of the latest revisions of procedures</p>				
<p>16.9 Specified and defined procedure use requirements, i.e. reader-worker method, reference use only, use-</p>				

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each-time, etc				
16.10 Expectations for the use of procedures during emergency situations				
Chapter 17. Operator Aids	Postings should provide useful information. [DOE-STD-1043-93, <i>Guide to Good Practice for Operator Aid Postings</i>]			
17.1 Technical evaluation and management approval of operator aids				
17.2 Administrative control of installed operational aids				
17.3 Operator aids installed to not interfere with controls and indications				
17.4 Periodic review for adequacy and correctness				
Chapter 18. Component Labeling	A good labeling program will enhance training effectiveness and will help reduce operator and maintenance errors resulting from incorrect identification of equipment. [DOE-STD-1044-93, <i>Guide to Good Practice for Equipment and Piping Labeling</i>]			

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<p>18.1 Components that require a label</p>				
<p>18.2 Label information consistent with regulations, standards, and contractor documents</p>				
<p>18.3 Unique identification of each labeled component</p>				
<p>18.4 Durable and securely attached labels that do not interfere with controls or equipment</p>				
<p>18.5 Administrative control of installed labels</p>				
<p>18.6 Process for identifying and replacing lost or damaged labels, preventing unauthorized or incorrect labels, and control of temporary labels</p>				

ATTACHEMENT 4 - LBNL INTEGRATED MANAGEMENT SYSTEM

414.1C QA	450.4 ISM	422.X CONOPS	LBNL Implementation
1. Management/Program	<p>ISM Guiding Principle 1, <i>Line Mgmt Responsibility for Safety</i></p> <p>ISM Guiding Principle 2, <i>Clear Roles and Responsibilities</i></p> <p>ISM Guiding Principle 4, <i>Balanced Priorities</i></p> <p>ISM Guiding Principle 5, <i>Identification of Safety Standards and Requirements</i></p>	<p>Ch. 1, <i>Operations Organization and Administration</i></p> <p>Ch. 4, <i>Communications</i></p> <p>Ch. 7, <i>Notifications</i></p> <p>Ch. 12, <i>Operations Turnover</i></p> <p>Ch. 13, <i>Operations Aspects of Facility Chemistry and Unique Processes</i></p> <p>Ch. 15, <i>Timely Orders to Operators</i></p> <p>Ch. 17, <i>Operator Aid Postings</i></p>	<ul style="list-style-type: none"> Identify the mission/goals of the Organization Develop an Organizational Chart Identify Roles and Responsibilities for management and employees
2. Management/Personnel Training and Qualification	<p>ISM Guiding Principle 1, <i>Line Mgmt Responsibility for Safety</i></p> <p>ISM Guiding Principle 3, <i>Competence Commensurate with Responsibilities</i></p>	<p>Ch. 1, <i>Operations Organization and Administration</i></p> <p>Ch. 3, <i>Control Area Activities</i></p> <p>Ch. 4, <i>Communications</i></p> <p>Ch. 5, <i>Control of On-shift Training</i></p> <p>Ch. 6, <i>Investigation of Abnormal Events</i></p> <p>Ch. 7, <i>Notifications</i></p> <p>Ch. 9, <i>Lockouts and Tagouts</i></p> <p>Ch. 12, <i>Operations Turnover</i></p> <p>Ch. 13, <i>Operations Aspects of Facility Chemistry and Unique Processes</i></p> <p>Ch. 14, <i>Required Reading</i></p> <p>Ch. 15, <i>Timely Orders to Operators</i></p> <p>Ch. 16, <i>Operations Procedures</i></p> <p>Ch. 17, <i>Operator Aid Posting</i></p>	<p>Establish and work to a Training Program that Identifies Training and Qualification Requirements for personnel</p>
3. Management/Quality Improvement	<p>ISM Guiding Principle 5, <i>Identification of Safety Standards and Requirements</i></p> <p>ISM Guiding Principle 6, <i>Hazard Controls Tailored to Work Performed</i></p> <p>ISM Guiding Principle 8, <i>Worker Involvement</i></p>	<p>Ch. 2, <i>Shift Routines and Operating Practices</i></p> <p>Ch. 6, <i>Investigation of Abnormal Events</i></p> <p>Ch. 7, <i>Notifications</i></p> <p>Ch. 8, <i>Control of Equipment and System Status</i></p>	<p>Establish and work within a quality system to ensure that work process are documented and adhered to, are assessed, identifies issues and</p>

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414.1C QA	450.4 ISM	422.X CONOPS	LBNL Implementation
4. Management/Documents and Records	ISM Guiding Principle 5, <i>Identification of Safety Standards and Requirements</i> ISM Guiding Principle 6, <i>Hazard Controls Tailored to Work Performed</i>	Ch. 2, <i>Shift Routines and Operating Practices</i> Ch. 4, <i>Communications</i> Ch. 8, <i>Control of Equipment and System Status</i> Ch. 11, <i>Logkeeping</i> Ch. 14, <i>Required Reading</i> Ch. 16, <i>Operations Procedures</i> Ch. 17, <i>Operator Aid Postings</i>	<ul style="list-style-type: none"> • Document work processes in the form of Policies/Procedures/Work Instructions and Authorizations • Review Documents for Technical Accuracy and Consistency and document the reviews • Maintain records (objective evidence) of performance of Policies/Procedures /Work Instructions and Authorizations • Archive records as required
5. Performance/Work Processes	ISM Guiding Principle 5, <i>Identification of Safety Standards and Requirements</i> ISM Guiding Principle 6, <i>Hazard Controls Tailored to Work Performed</i> ISM Guiding Principle 7, <i>Operations Authorization</i>	Ch. 2, <i>Shift Routines and Operating Practices</i> Ch. 3, <i>Control Area Activities</i> Ch. 4, <i>Communications</i> Ch. 8, <i>Control of Equipment and System Status</i> Ch. 9, <i>Lockouts and Tagouts</i> Ch. 11, <i>Logkeeping</i> Ch. 15, <i>Timely Orders to Operators</i> Ch. 18, <i>Equipment and Piping Labeling</i>	Ensure that work processes are planned, documented, communicated to employees, and adhered to.
6. Performance/Design	ISM Guiding Principle 5, <i>Identification of Safety Standards and Requirements</i> ISM Guiding Principle 6, <i>Hazard Controls Tailored to Work Performed</i> ISM Guiding Principle 7, <i>Operations Authorization</i>	Ch. 8, <i>Control of Equipment and System Status</i> Ch. 9, <i>Lockouts and Tagouts</i> Ch. 10, <i>Independent Verification</i>	Establish a documented configuration management program to reflect facility and/or equipment conditions and modifications, including validation and verification, documented drawings, calculations, component indices
7. Performance/Procurement	ISM Guiding Principle 5, <i>Identification of Safety Standards and Requirements</i> ISM Guiding Principle 6, <i>Hazard Controls Tailored to Work Performed</i>	Ch. 2, <i>Shift Routines and Operating Practices</i> Ch. 7, <i>Notifications</i> Ch. 8, <i>Control of Equipment and System Status</i>	Establish a procurement system, including flowdown of requirements to subcontractors, subcontractor evaluation, inspection/testing activities to ensure the right equipment and/or services are procured

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414.1C QA	450.4 ISM	422.X CONOPS	LBNL Implementation
	ISM Guiding Principle 7, <i>Operations Authorization</i>		
8. Performance/Inspection and Acceptance Testing	ISM Guiding Principle 5, <i>Identification of Safety Standards and Requirements</i> ISM Guiding Principle 6, <i>Hazard Controls Tailored to Work Performed</i> SM Guiding Principle 7, <i>Operations Authorization</i>	Ch. 2, <i>Shift Routines and Operating Practices</i> Ch. 8, <i>Control of Equipment and System Status</i> Ch. 9, <i>Lockouts and Tagouts</i> Ch. 10, <i>Independent Verification</i>	Establish an inspection and testing program to ensure systems and equipment work as intended before, after, and/or during operations, maintenance, and/or design activities.
9. Assessment/Management	ISM Guiding Principle 3, <i>Competence Commensurate with Responsibilities</i> ISM Guiding Principle 5, <i>Identification of Safety Standards and Requirements</i> ISM Guiding Principle 6, <i>Hazard Controls Tailored to Work Performed</i> ISM Guiding Principle 7, <i>Operations Authorization</i>	Ch. 1, <i>Operations Organization and Administration</i> Ch. 4, <i>Communications</i> Ch. 6, <i>Investigation of Abnormal Events</i> Ch. 10, <i>Independent Verification</i> Ch. 16, <i>Operations Procedures</i>	<ul style="list-style-type: none"> • Establish an assessment program that ensures management is involved with determining the health of their functional areas • Identify issues (noncompliance's, and/or nonconformance's) and/or process improvements • Perform causal analysis/extent of condition, if required to determine the cause of the issue • Develop corrective actions that will prevent or minimize recurrence
10. Assessment/Independent Assessment	ISM Guiding Principle 3, <i>Competence Commensurate with Responsibilities</i> ISM Guiding Principle 5, <i>Identification of Safety Standards and Requirements</i> ISM Guiding Principle 6, <i>Hazard Controls Tailored to Work Performed</i> ISM Guiding Principle 7, <i>Operations Authorization</i>	Ch. 1, <i>Operations Organization and Administration</i> Ch. 4, <i>Communications</i> Ch. 6, <i>Investigation of Abnormal Events</i> Ch. 10, <i>Independent Verification</i> Ch. 16, <i>Operations Procedures</i>	<ul style="list-style-type: none"> • Establish and work to an assessment program that includes independent assessments to ensure flowdown of external requirements to work process documentation and that the requirements are effectively implemented • Identify issues (noncompliance's, and/or nonconformance's) and/or process improvements • Perform causal analysis/extent of condition, if required to determine the cause of the issue • Develop corrective actions that will prevent or minimize recurrence

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414.1C QA	450.4 ISM	422.X CONOPS	LBNL Implementation