



Environment, Health & Safety Division

January 10, 2007

DIR-07-011

To: Joe Gray
Life Sciences Division Director ~

From: Howard K. Hatayama H
Environment, Health and Safety Division Director

Subject: 2006 Life Sciences Division Integrated Functional Appraisal

The Environment, Health and Safety Division conducted a triennial Integrated Functional Appraisal (IFA) of the Life Sciences Division during July and August 2006. The IFA team focused on work that involves higher or special hazards, formal authorizations, and permits.

The Life Sciences 2006 IFA Report is enclosed. It presents the IFA results and a description of the appraisal process.

The IFA Team reports that although a variety of findings were noted, the Division is generally working in accordance with their formal authorizations. Special attention to meeting all requirements specified in formal work authorizations will soon take on additional significance under the new 10 CFR 851 DOE Worker Safety and Health compliance umbrella.

Personnel were open, honest, and helpful during this appraisal which reflects on the strong safety management and leadership in the Life Sciences Division. I want to expressly thank to Tony Linard for the strong support provided during this logistically complex field appraisal.

Your IFA Team Leader, Ross Fisher, is available to answer any questions (x6934).

cc: Tony Linard
Rebecca Rishell

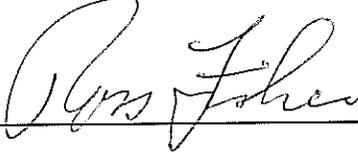
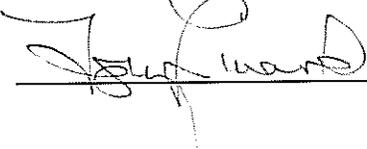
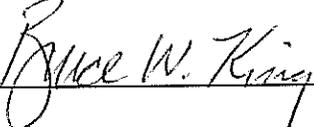
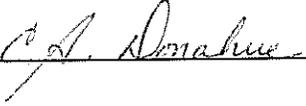
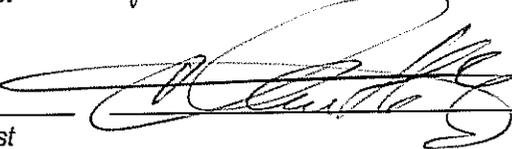
Lawrence Berkeley National Laboratory

Life Sciences Division



2006 Integrated Functional Appraisal

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Executive Summary

The Life Sciences Division Integrated Functional Appraisal (IFA) was conducted by the Environment, Health and Safety (EH&S) Division during the months of July and August, 2006. Typically, the IFA is conducted in a division every three years. The 2005 Self-Assessment year was the normal "cycle" interval for the LSD IFA, however, due to the moves and start up of new relocated labs at the Berkeley West Biocenter campus, the IFA was continued to the 2006 cycle.

2006 IFA emphasis was directed at a review of the formal level of work authorizations and any "hazardous work permits" or special certification required by Laboratory policy for operations within a division. The appraisal effort results in Findings that require corrective actions and observations that yield recommendations for areas of improvement. Findings and Observations are presented in Appendix E.

The work authorizations relevant to Life Sciences Division work are the Biological Use Authorization (BUA), Radiological Work Authorization (RWA), Activity Hazard Document (AHD), and Satellite (waste) Accumulation Areas. There are also three cranes and nine ultracentrifuges employed in the Division's work space.

The Life Sciences Division is one of the larger LBNL research divisions. The Division is the exclusive occupant in four onsite buildings; shares space in three onsite buildings; is the primary occupant in one UC campus building; and shares space at the offsite Berkeley West Biocenter campus. Although the size, geographical layout, and diversity in work conducted, offers a formidable challenge in managing and monitoring the authorization of work, Division management, supervisors, and staff are generally performing their work in a safe manner. Of the 104 work authorizations reviewed across 198 lab spaces, Observations resulted in five recommendations for improvement and twenty-four field Findings requiring corrective actions. Two institutional (Facilities responsibility) were noted. Multiple instances of the Observations and Findings were noted in some cases.

Biological Use Authorizations

Nineteen BUAs were assessed during this IFA. In general, biological work was compliant with BUA administrative and BL2 containment requirements with the exceptions noted in Appendix E Findings and Observations. The BUAs were updated within the last year and reflect current biological work in the labs. Biological work observations and findings, in decreasing order of frequency, fell in the following categories:

- Training deficiencies in Medical/Biohazardous Waste and General Biosafety and/or Bloodborne Pathogen courses (Finding)
- Lab coat laundering (Finding)
- Labeling equipment with biohazard labels (Finding)
- Hepatitis B medical surveillance (Finding)
- Exposure Control Plans (Finding)
- Aspiration flask vacuum line filtration (Recommendation)
- Cleanable seat coverings (Recommendation)
- Lab coat storage (Recommendation)
- Bunsen burners in Biosafety cabinets (Recommendation)

A highly noteworthy example of outstanding safety program and training document organization and safety management was observed in Dr. Eleanor Blakely's lab.

Radiological Work Authorizations

Radiological work was found to be fully compliant with the current set of fourteen Radiological Work Authorizations, one Low Activity Source Authorization, six X-ray Authorizations, and three Sealed Source Authorizations.

Dr. Priscilla Cooper's lab has developed an excellent set of training guidelines for personnel working under their RWAs.

Activity Hazard Documents

The IFA team audited six non-laser Life Sciences AHDs (laser AHDs will be audited in an independent review and were not included in the IFA). The AHDs cover health hazard gas and reactive chemical use. Laboratory conditions, technique and housekeeping were fastidious; however, several findings were noted pertaining to:

- Maintenance of current information in AHD
- Health hazard gas storage
- Eyewash/safety shower location
- Open fire door

Satellite Accumulation Areas

All but two of the fifty six SAAs were found in compliance with LBNL and regulatory requirements. The majority are very well identified and neatly maintained.

Fire Safety Permit

Variance to the Fire Safety Permit requirement was confirmed with the LBNL Fire Marshal for one laboratory operation that employs a torch.

IFA field evaluations and interviews with Principal Investigators (PIs), Lab Managers/Supervisors, and research staff indicated a high degree of effort and emphasis placed on conducting work within the respective work authorization envelopes. Life Sciences Division work is conducted with attention paid to safe work practices under these authorizations, and the Division personnel encountered were cognizant of Lab and Division's senior management efforts to emphasize line management authority and responsibility in the implementation of their Integrated Safety Management Plan.

A spirit of cooperation and an earnest desire to identify where improvements might be made was demonstrated by the LSD PIs, lab supervisors and staff.

Table of Contents

Section	Page
1 Introduction.....	1
1.1 Laboratory Management IFA Oversight.....	1
1.2 IFA Purpose	2
1.3 Scope.....	2
2 Appraisal Process.....	3
2.1 Team	3
2.1.1 Team selection	3
2.1.2 Team member roles and responsibilities.....	4
2.1.3 Team meetings	4
2.2 Planning the Appraisal	5
2.2.1 Identification of operations.....	5
2.2.2 Documentation and database reviews	5
2.2.3 IFA plan review	6
2.2.4 Field appraisal preparation	6
2.3 Field Audit and Interviews.....	7
3 Reporting Results.....	7
3.1 General Discussion.....	8
3.1.1 Biological Use Authorizations	8
3.1.2 Activity Hazard Documents.....	9
3.1.3 Radiological Authorizations	10
3.1.4 Satellite Accumulation Areas	10
3.1.5 Ultracentrifuges.....	11
3.1.6 Cranes	11
3.2 Categorization	12
3.2.1 Noteworthy practices	12
3.2.2 Findings	12
3.2.3 Observations.....	12
4 Corrective Action Tracking and Follow-up.....	13
4.1 Divisional Level Observation.....	14
4.1.1 Job Hazards Questionnaire	14
4.2 Institutional Level Findings.....	14
5 Conclusion.....	14

Table of Figures

Figure	Page
Figure 1.1 2006 IFA Steering Committee.....	1
Figure 2.1 Life Sciences IFA Team.....	3
Figure 3.1 Satellite Accumulation Area IFA Inspection Results	11
Figure 3.2 Noteworthy Practices Observed During the 2006 IFA	13

Table of Appendices and Attachments

Appendix A IFA Team Meetings, Inspections and Interviews
Appendix B Summary of Appraised Work Authorizations
Appendix C Life Sciences Division Authorization Map
Appendix D IFA Field Inspection Checklists
Appendix E Findings and Observations

Attachment 1 - Life Sciences Division IFA Plan Submitted to Steering Committee

1 Introduction

The Integrated Functional Appraisal (IFA) is a key component of Lawrence Berkeley National Laboratory's (LBNL's) integrated safety management (ISM) system, and forms one of the three tiers of LBNL's Environment, Safety and Health (ES&H) self-assessment program. The EH&S Division conducts an IFA for each Laboratory division every three years. The last Life Sciences IFA was in 2002 and would ordinarily have been on the IFA schedule last year in 2005. The Life Sciences Division and Office of Assurance and Assessment agreed mutually to postpone the IFA until 2006 due to the major reshuffling of research groups and moves into new space at the Berkeley West Biocenter. This allowed for a more realistic working model for appraisal purposes.

1.1 Laboratory Management IFA Oversight

The EH&S Division and Office of Contract Assurance jointly oversee the implementation of the IFA. In response to changing Laboratory program audit needs, a steering committee was formed to assure that maximum audit effectiveness is achieved. The IFA Steering Committee members are listed in Figure 1.1.

Figure 1.1 2006 IFA Steering Committee

Member	LBNL Organization
Michelle Flynn	Office of Contract Assurance (OCA) – Chair
John Chernowski	OCA
Paul Blodgett	EH&S - Industrial Hygiene
Jack Salazar	EH&S – Liaison Coordinator
Richard DeBusk	EH&S - Occupational Safety
Ross Fisher	EH&S - IFA Coordinator

Some restructuring of the IFA process has been initiated whereby:

- The IFA team leader field guidance and IFA report template previously provided as separate documents have been combined into one document
- The IFA will include hazardous work¹ program compliance
- Line management authorized work and non-technical work are de-emphasized

¹ Work conducted under special hazardous work authorization or permits such as lock-out-tag-out, energized work, confined space work, surface penetration, fire safety, hoisting and rigging activities, ultra-centrifuge use, etc.

- Details of formal work authorizations and hazardous work permits will be audited
- IFA team leaders will gain Steering Committee approval of an appraisal plan before performing the IFA
- The IFA report will be reviewed by the Steering Committee prior to final acceptance by the IFA Coordinator
- Audit training will be provided for IFA leaders and their teams
- EH&S Liaisons will be allowed the opportunity to lead IFA teams for a division other than their assigned division (Note: The LSD EH&S Liaison did not pursue this option and conducted the IFA of the Life Sciences Division)

1.2 IFA Purpose

The purpose of this IFA was to conduct a technical environmental and occupational safety and health audit and physical inspection of a division's hazardous operations under formal work authorizations, and the controls and programs used to mitigate and control the identified hazards. The appraisal evaluates compliance with federal, state and local regulation, as well as with LBNL policy. The IFA team reports appraisal results and tenders corrective action and improvement recommendations to the division as appropriate. The IFA process also provides an Operational Awareness window for LBNL's Berkeley Site Office DOE program liaisons.

1.3 Scope

The primary focus of the appraisal is directed toward work conducted under formal authorizations and hazardous work permits. Life Sciences Division formal work authorizations include Biological Use Authorizations (BUA), Radiological Work Authorizations (RWA), Low Activity Source (LAS) authorizations, Sealed Source Authorizations (SSA), X-ray authorizations, and Activity Hazard Analyses (AHA). For the purposes of this appraisal, a Satellite Accumulation Area (SAA) was considered as a type of formal work authorization. Other higher hazard activities in the Division that require special conditions and training include crane, ultracentrifuge, and heating torch use (LBNL Fire Safety Permit).

All of the AHA, BUA, RWA, LAS, X-ray, and SSA authorizations were reviewed during the IFA. Although ultracentrifuges were to be included in the appraisal under the initial Steering Committee guidance, LSD submits that there is no specific Lab policy or requirements against which an audit may be founded. The Steering Committee yielded to the comments and allowed that the IFA proceed without regard to ultracentrifuges. Overhead bridge crane locations were observed during the course of the IFA, but due to scheduling and time constraints, and

the highly infrequent use of the cranes, the IFA leader chose to defer completion of the crane audit.

No instances of work were noted where a formal authorization was not, but should be, in place. Several instances of existing authorizations being downgraded or suspended due to work having been concluded were noted.

2 Appraisal Process

2.1 Team

2.1.1 Team selection

The IFA team was lead by the EH&S Division Liaison for the Life Sciences Division with the assistance of the Life Sciences Division Safety Coordinator. Team members were selected based on subject matter knowledge and relevance to Life Sciences work. Figure 2.1 displays the 2006 Life Sciences Division IFA team.

Figure 2.1 Life Sciences IFA Team

Team Assignment	Name Affiliation	Subject Matter	Authorizations Reviewed
Team Lead	Ross Fisher EH&S Occupational Safety	Industrial Safety and Chemical Hygiene	Present for all reviews (except for B70A SAA)
Division Safety Coordinator	Tony Linard LSD	Life Sciences Operations	Present for majority of reviews
Team Member	Christine Donahue EH&S Radiation Protection Group Manager	Radiation Protection	LAS, RWA, SSA, X- ray
Team Member	Bruce King EH&S, Industrial Hygiene	Biosafety and Chemical Hygiene	AHD, BUA
Team Member	Amy Tanouye EH&S Waste Mgmt	Waste Management	SAA
Team Member	Chan Ho Yi EH&S Waste Mgmt	Waste Management	SAA
Team Member	Maram Kassis EH&S Waste Mgmt	Waste Management	SAA
DOE BSO Observer	Joe Krupa DOE Berkeley Site Office	BSO Field Program Rep for LSD	Observer
DOE BSO Observer	Liana Wong DOE Berkeley Site Office	BSO Field Program Rep for LSD	Observer

2.1.2 *Team member roles and responsibilities*

The roles and responsibilities of the IFA Team members listed in Figure 2.1 are as follows:

IFA Team Lead

- With assistance of Division Safety Coordinator define scope and content of the IFA
- Assembly of the IFA Team
- Manage retrieval of pertinent documentation
- Coordinate meetings and field appraisal schedule
- Prepare IFA report
- Communicate IFA results to Division

Division Safety Coordinator

- Develop IFA scope with Team Lead
- Provide logistics support for field appraisals
- Serve as Division representative and observer during the field interviews

Team Member

- Review applicable documents, policies, regulations
- Direct EH&S observations to the Team Lead and Division Safety Coordinator regardless of subject expertise
- Lead the work authorization review in their subject area
- Submit review checklists and written observations to Team Lead for incorporation into report

Team members selected for their field of expertise reviewed the respective work authorizations. The Electrical Safety subject matter expert was consulted on a limited basis on several issues that did not result in findings or observations.

2.1.3 *Team meetings*

The Team Leader, Division Safety Coordinator and Biosafety Officer held an initial planning meeting in mid-June to discuss the scope and scheduling of the IFA. The Division Safety Coordinator provided key contacts for scheduling the field reviews and the types of work authorizations and IFA review areas was determined. Agreement was reached to commence the IFA field reviews after July 1, 2006, the end of the Self-Assessment year to accommodate Division priorities. Due to the breadth of work conducted in the Life Sciences Division, it was anticipated that field reviews would encompass at least the complete month of July. This turned out to be the case.

Further planning and logistics communications and requests for team member support were accomplished via telephone and email.

A final kick-off meeting to review the Division work authorization “map” and final review schedule was conducted with the Division Safety Coordinator and Biosafety Officer on July 5, 2006, prior to embarking on the field reviews.

The Team Leader conducted an introductory and logistics briefing with the DOE BSO representative on July 6, 2006.

A close-out conference will be conducted with Life Sciences Division stakeholders to summarize the IFA results and address outstanding issues once a factual accuracy review of this report is completed by the IFA Team.

Appendix A-1 lists the key meetings conducted during the IFA process.

2.2 Planning the Appraisal

2.2.1 Identification of operations

Formal work authorizations for the Life Sciences Division that are subject to review by the IFA were identified by the appropriate EH&S Division program leads and Life Sciences Division Safety Coordinator. Authorizations are summarized in Appendix B which lists the specific authorization identification number/name and location. The “Authorization Map” provided in Appendix C, which lists the authorizations by building, was useful in planning and scheduling the field reviews.

2.2.2 Documentation and database reviews

To insure a complete review of formal work authorization for work conducted in the Life Sciences Division, the following documents were reviewed by the Team Lead and as appropriate by Team Members:

General Information

- Life Sciences Division ISM Plan
<http://www.lbl.gov/lifesciences/resources/esh.html>
- PUB 5344, LBNL EH&S Self-Assessment Program, Section 7 – Integrated Functional Appraisal
http://www.lbl.gov/DIR/OIA/assets/docs/OCA/OCA_ESH/PUB5344.pdf
- PUB 3000, Chapter 6, Safe Work Authorization
<http://www.lbl.gov/ehs/pub3000/CH06.html>
- PUB 3000, Chapter 21, Radiation Safety
<http://www.lbl.gov/ehs/pub3000/CH21.html>
- OHP Procedures, in particular, 707 (RWA Program)
<http://ehswprod.lbl.gov/ehswprod-viewdocs/ohp/procedures/707rev6.pdf>

- LBNL Biosafety Program and Manual
http://www.lbl.gov/ehs/biosafety/biosafety_program.shtml
- PUB 3093 Waste Accumulation Guidelines
http://www.lbl.gov/ehs/waste/waa_guidelines.shtml
- PUB 3000, Chapter 5.4.7, Cranes
http://www.lbl.gov/ehs/pub3000/CH05_4.html#5.4.7
- EHS Training Completion Database
<https://ehswprod.lbl.gov/EHSTraining/Jhq/EHSLogin.asp>

Facility Permits / Authorizations

- Safety Analysis Documents – The Accelerator Safety Document for the commercial unmodified cyclotron accelerator in Building 56 is covered by RWA 1077

Formal Work Authorizations

- Activity Hazard Documents (AHDs) provided by Larry McLouth from AHD Coordinator files
- Radiological Work Authorizations (RWAs) provided by David Kestell from Radiation Protection Group files
- Low Activity Source Authorizations (LASs) provided by David Kestell from Radiation Protection Group files
- Sealed Source Authorizations (SSAs) provided by David Kestell from Radiation Protection Group files
- X-ray Authorizations provided by David Kestell from Radiation Protection Group files
- Biological Use Authorizations (BUAs) provided by Bruce King from Biosafety Officer files

Hazardous Work Authorizations and Permits

- PUB 3000, Chapter 12.11, Fire Safety Permits
http://www.lbl.gov/ehs/pub3000/CH12.html#_Toc407009146

2.2.3 IFA plan review

An IFA Plan that lists the work authorizations proposed for review and a detailed schedule for the reviews was submitted to the IFA Steering Committee. Due to the critical time path and complexity of scheduling, the Plan was completed and submitted subsequent to starting the field reviews. Verbal discussion with the Steering Committee regarding the IFA completion was followed by written authorization to proceed. The IFA Plan is presented in Attachment 1. The field appraisal schedules for BUA and radiological authorization reviews and the notifications of SAA inspection are included in this attachment.

2.2.4 Field appraisal preparation

Prior to conducting the field portion of the appraisal the IFA Team:

- Reviewed a copy of each formal work authorization

- Looked up the training completion status for each worker named on the work authorization
- Cross checked whether training completion met training requirements under the authorization
- Determined if the authorization specified on-the-job training (OJT)

2.3 Field Audit and Interviews

The appraisal of each work authorization was performed at the work locations specified in the authorizations. An appointment was made with each PI (or PI-designated lab supervisor) for the BUA and AHD appraisals to insure availability for direct interview and questioning of the PI or the laboratory supervisor. Laboratory staff was also interviewed when available and as deemed necessary by the IFA team.

Life Sciences PIs and lab supervisors were notified that radiological work authorizations and SAA audits would be occurring during a specified time period and were encouraged, but not required, to be available to answer any questions the appraisal team may have. A majority of the PIs opted to be present or have their laboratory supervisor present for the radiological authorization review.

Torch and crane locations were observed during the above field opportunities. None were in use at the time of field appraisal.

A field inspection checklist was used to document notes from the interviews and observations and findings. The field inspection checklists are included in Appendix D of this report. Physical inspection of the lab/work spaces and interview questions focused on validating that work is being performed in compliance with authorization requirements, that personnel are trained and knowledgeable in the work authorization requirements, and that general safe conditions prevail in the work space.

The personnel attending, or interviewed during, authorization appraisals are listed in Appendix A-2.

3 Reporting Results

Each IFA team subject expert that conducted work authorization reviews completed their respective field inspection checklists, summarized their results, and reported observations and findings in the Findings and Observations table in Appendix E. Appendix E itself presents a summary of the Findings and Observations by type with instances listed. Appendix E-1 presents the detailed Findings and Observations with the code or policy reference and recommendation or corrective action for all but the training related findings. The details of the training related Findings are presented in Appendix E-2.

3.1 General Discussion

This field appraisal focused directly on work conducted under formal work authorization or hazardous work permit. If a condition or action was noted that fell outside of this scope, it was brought to the attention of the appropriate line management and Division Safety Coordinator. If such condition or action could lead to serious environmental or occupational safety or health consequence it would have been noted in the IFA findings. There were no issues of this nature noted.

3.1.1 *Biological Use Authorizations*

This IFA included appraisal of Life Science Division's BUAs. BUAs cover work with biohazardous materials (e.g., Risk Group 2), while Biological Use Registrations cover work with Risk Group 1 materials (e.g., work with rDNA). In the Life Sciences Division, there are nineteen BUAs and seven Registrations. Only BUAs were assessed during this IFA.

Biological materials used in work covered by BUAs can be categorized as follows: seventeen BUAs use human materials (e.g., cell lines, tissues, and fluids), nine BUAs use retroviruses and/or lentiviruses, one BUA uses microbes and select agents, and one BUA involves primate handling. In addition, eight BUAs involve work covered by the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens Standard.

The appraisal team included the Biosafety Program Manager (Bruce King), IFA Team Leader (Ross Fisher), the PI or laboratory leader and the Division Safety Coordinator (Tony Linard). DOE Berkeley Site Office representatives (Joe Krupa and Liana Wong) observed most appraisals. The appraisal team inspected the laboratory facilities, equipment, and practices using standard Biosafety Level 2 (BL2) containment criteria and the BUA document. BL2 containment criteria are specified by the Centers for Disease Control (CDC) and National Institute of Health (NIH) and requirements are detailed in the LBNL Biosafety Manual and Health and Safety Manual (PUB 3000, Chapter 4, Section 4.7). Containment criteria and inspection results for each BUA are shown on the completed LBNL Containment Laboratory Checklists in Appendix D.

In general, biological work was found to be compliant with BUA administrative and BL2 containment requirements. The BUAs were updated within the last year and reflect current biological work in the labs. BUA and BL2 containment requirements are generally being met with some exceptions as detailed in Appendix D. Appendix E includes eighteen Findings and four Observations related to biosafety. Instances within each Findings and Observation category are summarized below (see Appendix E for a detailed listing with locations and responsible Principal Investigators):

Findings (Requirements)

- Completion of Medical/Biohazardous Waste, General Biosafety, and/or Bloodborne Pathogen courses (16)
- Lab coat / laundry related (8)
- Labeling equipment with biohazard labels (7)
- Exposure Control Plan related (3)
- Hepatitis B medical surveillance (4)
- Biohazardous waste or SAA related (3)
- Eyewash/shower testing (3) – [2 Institutional / 1 LSD Finding]
- Sharps related (1)
- Lentiviral Vector Medical Surveillance Communication (1)
- Operation-Specific Training (1)
- TB Medical Surveillance (1)
- Medical Alert Card (1)
- Herpes B Virus medical procedure (1)
- Homogenization Operation (1)
- Window fly screens (1)
- Floor cleaning (1)
- Autoclave log and biological indicator (1)

Observations (Recommendations)

- Filters in aspiration flask vacuum lines (8)
- Bunsen burners in biosafety cabinets (6)
- Cloth chair cushions (6)
- Lab coat storage (2)

3.1.2 Activity Hazard Documents

Six Life Sciences Division AHDs were appraised for work in Buildings 55 and 56 in the Functional Imaging Department. These AHDs cover work with health hazard gases (e.g., ammonia, hydrogen chloride, fluorine, and carbon monoxide) and reactive hazardous materials. Work under one of the six AHD 3144, Preparation of Azidoheparanose was found to have been completed and now inactive. AHD 203, Large Gamma Irradiator, was reviewed under SSA 173. The hazards addressed in the AHD are more suitably covered in the SSA and the recommendation is to close out the AHD. The appraisal team included the IFA Team Leader (Ross Fisher), Industrial Hygienist (Bruce King), and the AHD supervisor (Jim O'Neil or Andy Gibbs). Tony Linard was present for part of the review. The appraisal team inspected the laboratory facilities, equipment, and practices using the AHD and requirements for hazardous gas or materials uses outlined in PUB-3000, (e.g., Chapter 13, Gases) and PUB-5341 (Chemical Hygiene and Safety Plan).

The hazardous gas and materials operations were generally compliant with the institutional and AHD administrative requirements. Inspection

checklists for the AHD reviews are located in Appendix D. Appendix E includes four Findings related to these AHDs that relate to:

- Maintenance of current information in the AHDs
- Storage of health hazard gases inside hoods
- Installation of compliant emergency eyewash and shower facilities
- Maintenance of fire door protection

According to the Safety Coordinator, these AHDs were last renewed in June of 2006. An audit of employee training profiles indicated the employees had appropriate chemical safety and hygiene, pressure safety, and gas safety courses.

3.1.3 Radiological Authorizations

The Life Sciences Division currently maintains fourteen Radiological Work Authorizations, one Low Activity Source Authorization, six X-ray Authorizations, and three Sealed Source Authorizations.

The appraisal team included the Radiation Protection Group Manager (Chris Donahue), IFA Team Leader (Ross Fisher), PI or laboratory supervisor and the Division Safety Coordinator (Tony Linard). The radiological appraisal inspections focused on key administrative aspects of the authorization document to insure an accurate reflection of the work and current users and on key radiation protection criteria (the Radioisotope Journal (RIJ), contamination and inventory control, exposure control, and posting and labeling). Spot checks of the RIJ against current and previous activity were performed. Questions were asked of laboratory personnel or PIs and supervisors to verify current authorized procedural and safety systems knowledge. The basis for the above appraisal areas lies in the Radiation Protection Group procedures (Procedure 707 primarily – Radiological Work Program) and PUB 3000, Chapter 21, Radiation Safety.

Inspection results for each radiological authorization audited are shown on the completed Field Inspection Guides in Appendix D.

Radiological work was found in every case to be in compliance with requirements.

3.1.4 Satellite Accumulation Areas

At the time of this appraisal, LSD was operating fifty-six Satellite Accumulation Areas (SAA), thirteen Radiological Waste Collection Areas (RWCA), and one Mixed Waste Satellite Accumulation Area (MWSAA) distributed through eight buildings. All SAAs, RWCA's and MWSAAs at all locations were inspected. The appraisal team included the EH&S Division Waste Generator Representatives for LSD (Amy Tanouye – Buildings 1, 55 and 64; and Chan Ho Yi – Buildings 73, 74, 84, and 977;

Maram Kassis – Building 70A), IFA Team Leader (Ross Fisher), PI or laboratory supervisor, and the Division Safety Coordinator (Tony Linard). DOE Berkeley Site Office representatives (Joe Krupa and Liana Wong) also observed a number of these appraisals. Inspection results, shown in Figure 3.1, demonstrate excellent SAA compliance. In the two non-compliant cases, the finding was discussed with the responsible supervisor and corrections were made on-the-spot.

Figure 3.1 Satellite Accumulation Area IFA Inspection Results

Location	SAA / RWCA / MWSAA inspected	Results
Bldg 84	12 / 3 / 0	All storage areas were compliant (100% pass rate)
Bldg 73	1 / 0 / 0	All storage areas were compliant (100% pass rate)
Bldg 74	7 / 2 / 1	1 SAA was not in compliance (90% pass rate)
Bldg 55	9 / 4 / 0	All storage areas were compliant (100% pass rate)
Bldg 64	4 / 1 / 0	All storage areas were compliant (100% pass rate)
Bldg 1	11 / 3 / 0	All storage areas were compliant (100% pass rate)
Bldg 977	7 / 0 / 0	All storage areas were compliant (100% pass rate)
Bldg 70A	5 / 0 / 0	Two SAAs were non-compliant. (60% pass rate)

3.1.5 Ultracentrifuges

The Division uses nine ultracentrifuges. The IFA Steering Committee had requested that ultracentrifuges be included in the appraisal. The Division submits that there is no specific Lab policy or requirements against which an audit may be founded. The Steering Committee yielded to the comments and allowed that the IFA proceed without regard to ultracentrifuges. Ultracentrifuge use is monitored by the Division Safety Coordinator, PIs, and lab supervisors.

3.1.6 Cranes

Several Life Sciences Division facilities have overhead bridge cranes. Matt Kotowski is the LBNL crane safety program lead and was consulted at the onset of this IFA. Due to scheduling and time constraints, and the highly infrequent use of the cranes, completion of the crane audit is deferred.

3.2 Categorization

Notation was made when work practices, lab conditions and administrative details appraised could be categorized as:

- A Noteworthy Practice
- An Observation
- A Finding

Noteworthy practices are presented in the body of this report, and Findings and Observations are presented in Appendix E.

3.2.1 *Noteworthy practices*

Outstanding practices and conditions that are recognized for their excellence that should be considered for lab-wide application are Noteworthy practices. During the course of this IFA the Team identified two Noteworthy practices as described below in Figure 3.2

3.2.2 *Findings*

Findings are the result of identification of practices or conditions that do not comply with the work authorization or permit, regulations, or LBNL policy. Findings are deficiencies and must be corrected.

Each Finding listed in Appendix E is referenced against the code or requirement for which a deficiency exists, and a Corrective Action is cited.

3.2.3 *Observations*

Observations indicate opportunities for improvement. They may be practices and conditions that are not necessarily out of compliance as observed, but could lead to non-compliance under other circumstances from those observed. Observations also can reflect practices that, with some additional level of effort, could achieve noteworthy status.

Each Observation listed in Appendix E is referenced against the code or requirement for which a deficiency exists, and a Recommendation is cited.

Figure 3.2 Noteworthy Practices Observed During the 2006 IFA

Item	Noteworthy Practices	Applicable Lab-wide
1	<p>Practice Observed</p> <p>BUA B071 – Dr. Eleanor Blakely. This lab effectively and efficiently keeps track of their safety administrative controls and records (e.g., authorizations, standard operating procedures, training records, etc.) in one binder.</p> <p>Basis</p> <p>There are typically several to many safety administrative controls required for each operation in their lab. Maintenance of records in one convenient and accessible location helps the lab staff maintain their controls and demonstrates their understanding of the administrative requirements.</p>	Yes
2	<p>Practice Observed</p> <p>RWA 1063 – Dr. Priscilla Cooper Lab. An outstanding user-developed On-the-Job training course outline is used in this lab. It has a detailed description of RWA 1063-specific radiological controls and procedures. It is the best in the field.</p> <p>Basis</p> <p>In addition to formal GERT and Radiological Worker training, lab specific On-the-Job training must be conducted to ensure new lab team members, and students working in the laboratory are familiarized and trained in the specific manipulations and controls in the conduct of their work. Development of a very specific training guide with the type lab specific detail, as was observed with RWA 1063, is beyond minimum compliance and a leading Best Management Practice.</p>	Yes

4 Corrective Action Tracking and Follow-up

Deficiencies noted during an IFA (numbered entries in Appendix E) require corrective action and must be entered into the LBNL Corrective Actions Tracking System (CATS) by the Life Sciences Division. Deficiencies that are discovered but corrected on the spot need not be entered into CATS, but are recorded in the IFA results. Questions regarding entry into CATS should be directed to the Office of Contract Assurance.

Observations and the corresponding recommendations for improvement (lettered entries in Appendix E) do not require entry into CATS.

4.1 Divisional Level Observation

An important component of corrective actions and follow-up is determination of programmatic and system improvements. An analysis of the appraisal findings and observations supports the following recommendation.

4.1.1 Job Hazards Questionnaire

LSD uses a division-specific Job Hazards Questionnaire (JHQ). Other LBNL divisions use the Lab-wide JHQ system. Differences between the Life Sciences JHQ and Lab-wide JHQ may have contributed to the training deficiencies found during this IFA. Training completion deficiencies represented the highest number of BUA appraisal findings. This does not correlate well with the Division's high JHQ training completion rate (97%) for EHS 739, Biosafety Training, or with the high overall JHQ completion rate (94%). It is recommended that the Training Department add the current Lab-wide biosafety JHQ questions to the LSD-specific JHQ as soon as possible and that LSD personnel should use the lab-wide JHQ until the changes are made.

4.2 Institutional Level Findings

Two cases of out-of-date or missing eyewash/safety shower inspection tags were noted as Institutional level findings. These may be entered into the CATS system by Life Sciences but the responsibility of correction is borne by Facilities. The third eyewash/safety shower Finding will be the responsibility of LSD as the PI has taken responsibility for the inspection due to restricted lab access.

5 Conclusion

The 2006 LSD IFA consisted of a planning and coordination effort whereby Division work under formal authorization or other hazardous work permit or special training requirements was identified (BUA, RWA, LAS, X-ray, SSA, AHD, and SAAs). An IFA team of EH&S subject matter experts was identified based on the identified appraisal areas. Prior to embarking on the field audits and inspections, relevant institutional and divisional documents and the work authorizations themselves were reviewed by the IFA team. The team audited 104 authorizations across 198 lab spaces during the month of July, 2006. Field inspection checklists along with the work authorization documents were used during the field audits.

Twenty-four Findings subject to corrective action (some already corrected on-the-spot) on the part of the Life Sciences Division and five Observations with recommendations for consideration on process or condition improvement were identified. The BUA work claimed the predominant number of Findings at eighteen, followed by the AHD work with four Findings. Two Findings were noted out of fifty-six SAAs inspected. Audit of twenty-four radiological work

authorizations yielded no Findings or Observations. Two institutional eyewash/safety shower inspection Findings were noted.

Analysis of the IFA results and review of Life Sciences programs that impact divisional work led to the determination of one divisional level Observation. Variance from the Lab-wide JHQ biosafety questions in the Life Sciences-specific JHQ may contribute to the leading BUA Finding – training deficiencies.

It is also important to highlight that two Noteworthy Practices were observed that demonstrate outstanding *'best practice'* efforts that should be used to set the standard for other labs. Life Sciences is urged to share these practices with the Lab community via the LBNL Lessons Learned web site.

Life Sciences Division Principal Investigators, lab supervisors, staff, and especially the Division Safety Coordinator, Tony Linard all were extremely helpful in conducting this very complex IFA. Attitudes were positive and their perseverance throughout the grueling field effort was a catalyst for getting factual and honest assessments of the work in progress. All parties involved demonstrated an eagerness and willingness to determine where deficiencies or opportunities for improvement might exist.

Appendices and Attachments

Appendix A IFA Team Meetings, Inspections and Interviews

Appendix B Summary of Appraised Work Authorizations

Appendix C Life Sciences Division Authorization Map

Appendix D IFA Field Inspection Checklists

Appendix E Findings and Observations

Attachment 1 - Life Sciences Division IFA Plan Submitted to Steering Committee

Appendix A IFA Team Meetings, Inspections and Interviews

Appendix A-1 - IFA Team Meetings		
Meeting Date	Topic	Attendees
6/12/06	Biological Use Authorization Review Scheduling Issues	Tony Linard, Bruce King, Ross Fisher
6/28/06	Email correspondence with Chris Donahue on logistics and schedule for radiological authorization reviews	Chris Donahue, Ross Fisher (email correspondence)
7/5/06	IFA schedule review and logistics discussion	Tony Linard, Ross Fisher
7/5/06	IFA schedule review and logistics discussion	Bruce King, Ross Fisher
7/6/06	IFA and logistics introductory briefing	Joe Krupa, Ross Fisher (telephone conversation)
8/25/06	Conversation with Fire Marshall regarding Fire Safety Permit requirement for B064 Room 102	Gary Piermattei, Ross Fisher - LBNL
12/12/06	IFA factual accuracy discussion with Division Safety Coordinator	Tony Linard, Ross Fisher
1/10/06	IFA closeout with Division Safety Coordinator	Tony Linard, Ross Fisher

Appendix A-2 - IFA Inspections and Interview Dates		
Inspection / Interview Date	Location	Participants
BUA B002, B141, B142 7/7/06	B070A Room 4475	Tama Torok, Bruce King, Tony Linard, Ross Fisher – LBNL; Joe Krupa – DOE BSO
BUA B045 7/10/06	B074 Rooms 217, 225, 265, 265B, 268, 2035	Joel Anne Chasis, Gloria Lee, Bruce King, Tony Linard, Ross Fisher – LBNL; Joe Krupa, Liana Wong – DOE BSO
BUA B100 7/10/06	B074 Rooms 217, 225, 265	John Conboy, Marilyn Parra, Bruce King, Tony Linard, Ross Fisher – LBNL; Joe Krupa, Liana Wong – DOE BSO
BUA B129 7/11/06	B055 Rooms 139, 139A	Jamie Eberling, Bruce King, Tony Linard, Ross Fisher – LBNL; Liana Wong – DOE BSO
BUA B066 7/11/06	B074 Rooms 316B, 319A, 331, 344, 3050, 3110	Priscilla Cooper, Cliff Ng, Bruce King, Tony Linard, Ross Fisher – LBNL
BUA B160 7/11/06	B074 Rooms 363, 370, 378, 385, 385A	Andrew Wyrobek, Francesco Marchetti, Tarlochan Nijjar, Bruce King, Tony Linard, Ross Fisher – LBNL
BUA B085 7/11/06	B074 Rooms 217, 225, 265B, 268	Sharon Krauss, Minjoung Go, Bruce King, Tony Linard, Ross Fisher – LBNL
BUA B111 7/13/06	B074 Rooms 152, 166	Ulli Weier, Bruce King, Tony Linard, Ross Fisher – LBNL
BUA B113 7/13/06	B084 Rooms 118, 155, 161, 161A, 165, 175	Nori Kohwi, Bruce King, Tony Linard, Ross Fisher – LBNL; Liana Wong – DOE BSO
BUA B071 7/13/06	B070A Rooms 1121A, B, C, 1103, 1119	Eleanor Blakely, Kathy Bjornstead, Polly Chang, Chris Rosen, Bruce King, Tony Linard, Ross Fisher – LBNL; Joe Krupa, Liana Wong – DOE BSO
BUA B136 7/13/06	B074 Rooms 344, 346, 384	Dr. G. Shyamala, Bruce King, Tony Linard, Ross Fisher – LBNL
SAA Review 7/17/06	B001 Rooms 116, 160H, 260, 267, 316, 322, 330, 358, 364, 366, 373, Loading Dock	Amy Tanouye, Tony Linard, Ross Fisher, David Larson – LBNL; Joe Krupa – DOE BSO
SAA Review 7/17/06	B055 Rooms 116, 118, 120, 127, 151, 208, 214	Amy Tanouye, Tony Linard, Ross Fisher - LBNL
SAA Review 7/17/06	B064 Rooms 102, 223, 224, 234	Amy Tanouye, Tony Linard, Ross Fisher - LBNL
SAA Review 7/17/06	B070A Rooms 1121A, 1121B	Maram Kassis - LBNL
LAS L010 7/20/06	B001 Rooms 116	Christine Donahue, Tony Linard, Ross Fisher – LBNL; Joe Krupa – DOE BSO

Appendix A-2 - IFA Inspections and Interview Dates		
Inspection / Interview Date	Location	Participants
RWA 1001 7/20/06	B001 Rooms 322, 361, 364	Christine Donahue, Tony Linard, Ross Fisher – LBNL; Joe Krupa – DOE BSO
RWA 1004 7/20/06	B001 Rooms 373, 377A	Christine Donahue, Tony Linard, Ross Fisher – LBNL; Joe Krupa – DOE BSO
X-Ray 001-366 7/20/06	B001 Room 366	Christine Donahue, Tony Linard, Ross Fisher – LBNL; Joe Krupa – DOE BSO
RWA 1010 7/20/06	B055 Rooms 116, 120, 122, 126, 128, 136, 139, 139Hall, 151	Christine Donahue, Tony Linard, Ross Fisher – LBNL
RWA 1013 7/20/06	B055 Rooms 120, 126, 128, 134, 139, 139Hall, 151	Christine Donahue, Tony Linard, Ross Fisher – LBNL
RWA 1041 7/20/06	B055 Rooms 120, 122, 134, 139A, 139Hall, 151, 200	Christine Donahue, Tony Linard, Ross Fisher – LBNL
SSA 172 7/20/06	B055 Rooms 134, 139	Christine Donahue, Tony Linard, Ross Fisher – LBNL
X-Ray 055-122 7/20/06	B055 Rooms 122	Christine Donahue, Tony Linard, Ross Fisher – LBNL
X-Ray 055-125 7/20/06	B055 Rooms 125	Christine Donahue, Tony Linard, Ross Fisher – LBNL
RWA 1077 7/20/06	B056 Rooms 100, 101	Christine Donahue, Tony Linard, Ross Fisher, Chris Ramsey – LBNL
RWA 1102 7/20/06	B064 Room 234	Christine Donahue, Tony Linard, Ross Fisher, Roger Hoskins – LBNL
X-Ray 070A-1103 7/21/06	B070A Room 1103	Christine Donahue, Tony Linard, Ross Fisher, Kathy Bjornstead – LBNL
RWA 1018 7/21/06	B070A Room 1115	Christine Donahue, Tony Linard, Ross Fisher, Stacy Gauny – LBNL
RWA 1063 7/21/06	B074 Rooms 312, 330, 330A, 344, 350	Christine Donahue, Tony Linard, Ross Fisher – LBNL
SSA 171 7/21/06	B074 Room 144A	Christine Donahue, Tony Linard, Ross Fisher – LBNL
SSA 173 7/21/06	B074 Room 131	Christine Donahue, Tony Linard, Ross Fisher – LBNL
X-Ray 074-344 7/21/06	B074 Room 344	Christine Donahue, Tony Linard, Ross Fisher – LBNL
RWA 1049 7/21/06	B084 Room 157, B074 Room 330	Christine Donahue, Tony Linard, Ross Fisher – LBNL
RWA 1085 7/21/06	B084 Rooms 153, 155, 161 B074 Room 238C	Christine Donahue, Tony Linard, Ross Fisher – LBNL
BUA 099 7/24/06	B977 Rooms 208, 209, 210, 211	Shraddha Ravani, Bruce King, Tony Linard, Ross Fisher – LBNL; Joe Krupa, Liana Wong – DOE BSO

Appendix A-2 - IFA Inspections and Interview Dates		
Inspection / Interview Date	Location	Participants
SAA Review 7/24/06	B977 Rooms 116, 204, 209, 210, 217, 231, 240	Chan Yi, Tony Linard, Ross Fisher, - LBNL; Joe Krupa, Liana Wong – DOE BSO
SAA Review 7/25/06	B073 109	Chan Yi, Tony Linard, Ross Fisher, - LBNL; Joe Krupa, Liana Wong – DOE BSO
SAA Review 7/25/06	B074 Rooms 166, 178, 217, 252, 265, 265A, 312, 330, 348, 378, 384, 385, 3050, 3080, 3110	Chan Yi, Tony Linard, Ross Fisher, - LBNL; Joe Krupa, Liana Wong – DOE BSO
SAA Review 7/25/06	B084 Rooms 118, 153, 155, 157, 163, 205, 355	Chan Yi, Tony Linard, Ross Fisher, - LBNL; Joe Krupa, Liana Wong – DOE BSO
RWA 1050 7/26/06	B977 Room 205	Christine Donahue - LBNL
RWA 1062 7/26/06	B977 Rooms 205, 240	Christine Donahue - LBNL
X-Ray 977-203 7/26/06	B977 Room 203	Christine Donahue - LBNL
BUA 122 7/26/06	B977 Rooms 212, 216, 217	Wen-Lin Kuo, Bruce King, Tony Linard, Ross Fisher – LBNL; Joe Krupa, Liana Wong – DOE BSO
BUA 079 7/26/06	B977 Rooms 224, 225, 231, 235, 236,	Genee Lee, Bruce King, Tony Linard, Ross Fisher – LBNL
BUA 051 7/26/06	B977 Rooms 239, 240, 242	Paul Yaswen, Bruce King, Ross Fisher – LBNL
BUA 151 7/27/06	B073 Rooms 001C, 108, 109, 110	Martha Stampfer, James Garbe, Bruce King, Ross Fisher – LBNL; Joe Krupa, Liana Wong – DOE BSO
BUA 161 PET/SPECT 7/28/06	B055 Rooms 122 (SPECT), 139 (PET), 151 (sink only)	Suzanne Baker, Bruce King, Tony Linard, Ross Fisher – LBNL; Liana Wong – DOE BSO
BUA 055 7/28/06	B084 Rooms 155, 174	Judith Campisi, Ying Zou, Bruce King, Tony Linard, Ross Fisher – LBNL; Joe Krupa, Liana Wong – DOE BSO
BUA 077 7/28/06	B001 Rooms 271, 330, 331, 367, 368	Bing Jap, Peter Walian, Bruce King, Tony Linard, Ross Fisher – LBNL; Joe Krupa, Liana Wong – DOE BSO
AHD 231 7/31/06	B056 Room 101	Jim O'Neil, Bruce King, Tony Linard, Ross Fisher – LBNL
AHD BE1016 7/31/06	B055 Room 208	Andy Gibbs, Bruce King, Tony Linard, Ross Fisher – LBNL
AHD 209, 210, 211 7/31/06	B055 Room 208, 214	Andy Gibbs, Bruce King, Tony Linard, Ross Fisher – LBNL

Appendix A-2 - IFA Inspections and Interview Dates		
Inspection / Interview Date	Location	Participants
AHD 203 (see SSA 173) 7/21/06	B074 Room 131	Chris Donahue, Tony Linard, Ross Fisher - LBNL
Crane 055 CR001 8/30/06	B055 Rooms 123	Matt Kotowski, Ross Fisher - LBNL
Crane 8/30/06	B001 Rooms 158, 160G	Ross Fisher - LBNL

Appendix B Summary of Appraised Work Authorizations

DOCUMENT TYPE/TITLE	Reference (Doc #, dates, etc.)
Facility Permits / Authorizations	
Safety Analysis Documents	Accelerator safety covered by RWA 1077
Discharge permits (sewer, storm water, air)	None
NEPA/CEQA documents	None
Formal Work Authorizations	
Activity Hazard Documents (AHDs)	<i>AHD 203 – Large Gamma Irradiator</i>
	<i>AHD 209 - Hydrogen Chloride Gas</i>
	<i>AHD 210 – Ammonia Compressed Gas</i>
	<i>AHD 211 – Carbon Monoxide Compressed Gas</i>
	<i>AHD 231 – Fluorine Compressed Gas for Fluorine-18 Production</i>
	<i>AHD BE1016 – Water Reactive Solvent Stills (Sodium Metal in Tetrahydrofuran and Calcium Hydride in DCM)</i>
	<i>AHD 3144 – Preparation of Azidohexapyranose</i>
	<i>Note: Laser AHDs 2031, 2078, BE1005, and BE1017 will be addressed by Laser Safety Officer outside of the IFA process</i>
Radiological Work Authorizations (RWA)	<i>RWA 1001, 1004, 1010, 1013, 1018, 1041, 1049, 1050, 1062, 1063, 1077, 1085, 1102</i>
Radiological Work Permits (RWP)	<i>None</i>
General License Authorizations (GLA)	<i>None</i>
Low Activity Source Authorizations (LAS)	<i>LAS L010</i>
Sealed Source Authorizations (SSA)	<i>SSA 171, 172, 173</i>
X-ray Authorizations (XA)	<i>X-Ray 001-366, 055-122, 055-125, 070A-1103, 074-344, 977-203</i>
Human Subjects	<i>Not Reviewed</i>
Biological Use Authorizations/Registration	<i>BUA-B002, B045, B051, B055, B066, B071, B077, B079, B085, B099, B100, B111, B113, B122, B129, B136, B151, B160, PET/SPECT/B161</i>

DOCUMENT TYPE/TITLE	Reference (Doc #, dates, etc.)
Waste Management Group information on Satellite Accumulation Areas (SAAs) and Waste Accumulation Areas (WAAs)	B1 (Rms 116, 160H, 260, 267, 316, 322, 330, 358, 364, 366, 373, loading dock) B55 (Rms 116, 118, 120, 127, 151, 208, 214) B64 (Rms 102, 223, 224, 234) B70A 1121A, 1121B B73 Rm 109 B74 (Rms 166, 178, 217, 252, 265, 265A, 312, 330, 348, 378, 384, 385, 3050, 3080, 3110) B84 (Rms 118, 153, 155, 157, 163, 205, 355) B977 (Rms 116, 204, 209, 210, 217, 231, 240)
Work Permits or Special Requirements	
Fire Safety Permit	B64 Rm 102
Crane Use	B55 Rm 122

Appendix C Life Sciences Division Authorization Map

Appendix C

Bldg	AHD	BUA	RWA	RWP	LAS	X-Ray	SSA	SAA	
1		B077-2,R,H	1001-I		L010	366		116	330
			1004-II					160H	358
			1160-II					260	364
								267	366
								316	373
								322	load dock
55	209	B129-2,R	1010-II			122	172-I	116	208
	210	B161 PET/SPECT	1013-III			125		118	214
	211		1041-III					120	
	BE1016							127	
	3144							151	
56	231		1077-III						
64			1102-I					102	224
								223	234
70A		B002-2,R	1018-I			1103		1121A	
		B071-2,R,H						1121B	
73		B151-2,R,H,B						109	
74	203	B045-2,R,H,B	1063-II			344	171-III	166	348
		B066-2,R,H					173-I	178	378
		B085-2,R,H						217	384
		B100-2,R,H						252	385
		B111-2,H,B						265	3050
		B136-2,H						265A	3080
		B160-2,H,B						312	3110
							330		
84		B055-2,R,H	1049-I					118	163
		B113-2,R,H	1085-II					153	205
								155	355
								157	
977		B051-2,R,H,B	1050-I			203		116	217
		B079-2,R,H	1062-II					204	231
		B099-2,R,H						209	240
		B122-2,R,H,B						210	

BUA = Biological Use Authorization

B#,x,y,z - (Biosafety Level), (R = rDNA), (H = Human tissue), (B = Blood Borne Pathogen Plan Required)

Appendix D IFA Field Inspection Checklists

The Field Inspection Sheets used for the review of each type of work authorization appraisal are included in this appendix in the following order.

- a) - Biological Use Authorization
- b) - Radiological Work Authorization
- c) - Activity Hazard Document
- d) - Satellite Accumulation Area

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Tamas Torok	Bio Use Auth #: B002, B141, B142
Division: Life Sciences	Labs/Rms. Inspected: 70A-4475
Inspected By: B. King, R. Fisher, T. Linard, J. Krupa, L. Wong with Tamas Torok	Date: 7/7/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH “Guidelines for Research involving Recombinant DNA Molecules” (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X		
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X		
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
<i>Other</i>			
Current autoclave logs were not available to show that that biological indicators had been used to test the autoclave's efficiency (i.e., sterilization).		X	Provide autoclave logs
The emergency eyewash and shower unit was last tested 1/17/06 by Tamas Torok, as indicated on the E/S unit's tag.		X	Quarterly flow testing is required.

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X		
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X		
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.	X		Contract laundry service is provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.			
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual, Biological Use Authorization, and Select Agent Plan
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: BSCs in 70A-4475 Certification is current

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Joel Anne Chasis	Bio Use Auth or Reg #: B045-060906
Division: Life Sciences	Labs/Rms. Inspected: 74-217, 225, 265, 265B, 268, 2035
Inspected By: B. King, R. Fisher, T. Linard, J. Krupa, L. Wong with Joel Anne Chasis (and Gloria Lee or Sara Short)	Date: 7/10/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH "Guidelines for Research involving Recombinant DNA Molecules" (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	One out of four employees (25%) listed in the BUA and audited completed both EHS 739 Biosafety and EHS 730 Biowaste. EHS 735/738 Bloodborne Pathogen training was not appraised, since BBP work has not yet started.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		Bleach and IPA
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X	X	Room chairs in BL2 rooms 225 and 265B have cloth seats
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
<i>Other</i>			
COMPLIES			
YES NO			
<i>Other</i>			
Bunsen burners in biosafety cabinets are not recommended due to known fire incidents. If burners are needed, burners with safety features should be used.		X	Bunsen burner in biosafety cabinet in Room 265B. The Chasis Group reported that this burner belongs to the Krauss group.

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X		Completion of Hepatitis B medical surveillance requirements were not appraised, since this work has not yet started.
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X		Biohazard sign posted at Room entrance
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X	X	Lab coats should be hung on hooks, not on backs of chairs.
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.	X		Contract laundry service is provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: BSCs in 74-225, 265B Date of Last Certification: Annual certification is current

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: John Conboy	Bio Use Auth or Reg #: B100-061606
Division: Life Sciences	Labs/Rms. Inspected: 74-217, 225, 265
Inspected By: B. King, R. Fisher, T. Linard, J. Krupa, L. Wong with John Conboy and Marilyn Parra	Date: 7/10/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH "Guidelines for Research involving Recombinant DNA Molecules" (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	3 out of 7 employees(43%) listed in the BUA and audited completed both EHS 739 Biosafety & EHS 730 Biowaste.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		Emergency action plan is posted. Recommend reviewing plan with staff.
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		70% Ethanol or 10% bleach
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X	X	Room 225 chair at BL2 biosafety cabinet has cloth seat
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
<i>Other</i>			
COMPLIES			
YES NO			
<i>Other</i>			
Bunsen burners in biosafety cabinets are not recommended due to known fire incidents. If burners are needed, burners with safety features should be used.		X	Bunsen burner in ibiosafety cabinet in Room 225
The vacuum line on the aspiration flask was hung on a drawer.		X	Do not hang line on drawer.

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X	X*	* Provide hazard communication and medical surveillance requirements to the Chasis group regarding use of third-generation lentiviral vectors biosafety cabinet(s) that are shared.
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X		
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X	X	Personal coats should not be hung on the same hooks as the lab coats.
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.	X		Contract laundry service is provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: BSCs in 74-225, 265B Date of Last Certification: 7/29/06

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Jamie Eberling	Bio Use Auth or Reg #: B129-040506
Division: Life Sciences	Labs/Rms. Inspected: 139, 139A
Inspected By: B. King, R. Fisher, T. Linard, L. Wong, with J. Eberling	Date: 7/11/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH "Guidelines for Research involving Recombinant DNA Molecules" (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS	
<i>Standard Microbiologic Practices and Training</i>				
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	One out of 3 employees (33%) who do work under the BUA and audited completed all of the following required courses: EHS 739 Biosafety, EHS 730 Biowaste, and EHS 735/738 Bloodborne Pathogen training	
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X			
3. Access to lab is limited or restricted at the discretion of the lab PI.	X			
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X			
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X			
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.				N/A
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X			
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X			
9. Policies for safe handling of sharps are instituted.	X			
10. All procedures are performed carefully to minimize the creation of aerosols.	X			
<i>Laboratory Facilities</i>				
11. The lab is designed so that it can be easily cleaned.	X			
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X			
13. Spaces between equipment are accessible for cleaning & are clean.	X			
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X			
15. Openable windows are fitted with fly screens.			N/A	
<i>Other</i>				
Operation-specific training required in the BUA is completed and documented for each person conducting work.	X	X	Some individuals are trained. Training is not documented.	
B virus Medical Alert Cards and emergency medical protocols are available in the work area		X		

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X	X	Records of annual TB tests for each person are needed in LBNL Health Services.
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X		Biohazard sign posted at Room entrance.
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.	X		Contract laundry service is provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: NO Biosafety Cabinets are used.

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Priscilla Cooper		Bio Use Auth or Reg #: B066-062206	
Division: Life Sciences	Labs/Rms. Inspected: 319A, 316B, 344, 331, 3110, 3050		
Inspected By: B. King, R. Fisher, T. Linard, P.Cooper, C.Ng		Date: 7/11/06	
<i>Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH <u>Biosafety in Microbiological and Biomedical Laboratories, 4th ed.</u> and NIH "Guidelines for Research involving Recombinant DNA Molecules" (2002).</i>			
ALL BIOSAFETY LEVELS			
COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X ^A	X ^B	^A Everyone reads the BUA. ^B Four out of nine employees (44%) listed in the BUA and audited completed both EHS 739 Biosafety and EHS 730 Biowaste.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		Emergency procedures have been reviewed at staff meetings.
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		Eating and drinking is allowed only in the lunch room 3110, in offices, or at lab desks and not in conjunction with lab-bench work.
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X	X	Chair cushions at biosafety cabinets in Biosafety Level 2 Room 349A and 316B cannot be disinfected (i.e., three chairs with cloth-covered seat cushions and one chair with a cracked-vinyl cushion).
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
COMPLIES			
YES			
NO			
<i>Other</i>			
The vacuum flask trap apparatuses used in the biosafety cabinets in Rooms 316B and 349A do not have vacuum filters between the flask and the house vacuum system to prevent biological aerosols from entering the house system.		X	Install filters in the vacuum system (e.g., Whatman, VACU-GARD, Disposable Filters (Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737)
Since there was no inspection tag on the emergency eyewash in 74-349A, there is no indication that the eyewash is being tested quarterly		X	Request that Facilities conduct quarterly tests as indicated on an inspection tag.

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X		
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X ^A	X ^B	^A Biohazard sign posted at Room entrance. ^B Biohazard labels are not posted on equipment used to store or handle Risk Group 2 materials.
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		Cloth lab coats are worn. Disposable lab coats are worn for lentiviral vector work.
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.		X	No contract laundry service is provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: 316B(1), 349A(2), 344(1), 331(1) Annual BSC certifications are current.

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Francesco Marchetti, Andrew Wyrobek	Bio Use Auth or Reg #: B160-060906
Division: Life Sciences	Labs/Rms. Inspected: 74-363, 370, 378, 385, 385A
Inspected By: B. King, R. Fisher, T. Linard with Francesco Marchetti and Andrew Wyrobek	Date: 7/11/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH "Guidelines for Research Involving Recombinant DNA Molecules" (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	All of the employees listed in the BUA need to complete either EHS 739 Biosafety and/or EHS 730 Biowaste.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		Need hang up LBNL emergency response guides.
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X		
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
<i>Other</i>			

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X	X*	* Prior to starting bloodborne pathogen work, edit the Exposure Control Plan and ensure applicable employees complete Hepatitis B medical surveillance requirements (note 8/4/06 B. King email).
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X		Biohazard sign posted at Room entrance. Biohazard labels were provided for equipment that will handle Risk Group 2 materials.
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, etc	X	X	Contract lab coat laundry service is required.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: BSCs in 370 (1) and 385A (2) Annual Certification is current

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Sharon Krauss		Bio Use Auth or Reg #: B085-011706	
Division: Life Sciences	Labs/Rms. Inspected: 74-217, 225, 265B, 268		
Inspected By: Bruce King and Ross Fisher		Date: 7/11/06	
<i>Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH <u>Biosafety in Microbiological and Biomedical Laboratories, 4th ed.</u> and NIH "Guidelines for Research involving Recombinant DNA Molecules" (2002).</i>			
ALL BIOSAFETY LEVELS			
COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	Both of the employees listed in the BUA and have not completed either EHS 739 Biosafety and/or EHS 730 Biowaste.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		Eating and drinking is done in the lunch room.
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X	X	Chair at BL2 biosafety cabinet in 265B has a cloth seat cushion.
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
COMPLIES			
Other			
Bunsen burners in biosafety cabinets are not recommended due to known fire incidents. If burners are needed, burners with safety features should be used.		X	Bunsen burner in biosafety cabinet in Room 265B

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X		
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X		Biohazard sign posted at Room entrance
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.	X		Contract laundry service is provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.			N/A
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: BSCs in 74-265B Annual Certification is current

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Ulli Weier		Bio Use Auth or Reg #: B111-060906	
Division: Life Sciences	Labs/Rms. Inspected: 74-152, 166		
Inspected By: B. King, R. Fisher, T. Linard with Ulli Weier		Date: 7/13/06	
<i>Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH <u>Biosafety in Microbiological and Biomedical Laboratories, 4th ed.</u> and NIH "Guidelines for Research involving Recombinant DNA Molecules" (2002).</i>			
ALL BIOSAFETY LEVELS			
COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X*	* One out three employees (33%) listed in the BUA and audited completed EHS 730 Biowaste,
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X	X	The chair at the BL2 biosafety cabinet in 166 has a cloth seat.
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
Other			
Implementation of OSHA Bloodborne Pathogen Standard requirements (e.g., training, Exposure Control Plan, Hepatitis B vaccination) were not included in this appraisal since this work had not yet started.			

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X		Completion of Hepatitis B medical surveillance requirements
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X	X	Biohazard sign posted at Room entrance, but biohazard labels must be posted on equipment used to store or handle Risk Group 2 materials.
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.		X	A contract laundry service is not provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: Biosafety cabinet in 166 Date of Last Certification: 7/29/05

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigators: N. Kohwi, T. Kohwi-Shigematsu, J. Campisi	Bio Use Auth or Reg #: B113-061606
Division: Life Sciences	Labs/Rms. Inspected: 84-118, 155, 161, 161A, 165, 175
Inspected By: B. King, R. Fisher, T. Linard, J. Krupa, and L. Wong with Nori Kohwi	Date: 7/13/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH "Guidelines for Research Involving Recombinant DNA Molecules" (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	5 out of 11 employees (45%) listed in the BUA and audited completed both EHS 739 Biosafety and EHS 730 Biowaste.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		Drinking is allowed in break room, or at desks only in Room 155 and not in conjunction with work.
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X		
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X	X	Lab floor in 161A is dirty and needs routine cleaning.
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
<i>Other</i>			
Vacuum-flask apparatuses used at biosafety cabinets to trap aspirated culture solutions do not have in-line HEPA filters to protect the house vacuum system from aerosolized biological material.		X	Example filters are Whatman, VACU-GARD, Disposable Filters (i.e., Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737).
Bunsen burners in biosafety cabinets are not recommended due to known fire incidents. If burners are needed, burners with safety features should be used.		X	Bunsen burner in Nuairie 12232RT biosafety cabinet in Room 84-175

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X		
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X	X	Biohazard sign posted at Room entrance, but biohazard labels are not posted on equipment used to store or handle Risk Group 2 materials.
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X	X	Lab coats are hung in on top of each other. Separate hooks should be used.
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.	X	X	No contract lab coat laundry service is provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		Inject and perfuse mice at the animal facility.
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of Biosafety Cabinets (BSCs): One BSCs in 161A and One BSC in 174 Date of Last Certification: 6/06

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Ellie Blakely	Bio Use Auth or Reg #: B071-061506
Division: Life Sciences	Labs/Rms. Inspected: 70A-1103, 1119, 1121A B C
Inspected By: B. King, R. Fisher, J. Krupa, L. Wong, Ellie Blakely, Kathleen Bjornstad, Polly Chang, Chris Rosen	Date: 7/13/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH "Guidelines for Research involving Recombinant DNA Molecules" (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	6 out of 7 employees (86%) listed in the BUA and audited completed both EHS739Biosafety & EHS730 Blowaste. Chris Rosen needs EHS 739.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. Procedures performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X		
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
<i>Other</i>			
The vacuum flask trap apparatuses used in the biosafety cabinets in Room 1121C do not have vacuum filters between the flask and the house vacuum system to prevent biological aerosols from entering the house system.		X	Install filters in the vacuum system (e.g., Whatman, VACU-GARD, Disposable Filters (Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737)
The inspection tag on the emergency eyewash and shower unit (E/S) in Room 1119 indicates that the E/S is not being flow-tested by Facilities. Quarterly tests are required.		X	Contact the Facilities Work Request Center and request that the E/S be tested and included on the quarterly E/S inspections.

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X		This lab has lab-specific on-the-job training. OJT is documented in a binder. This is a Noteworthy Practice!
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X	X	There is a biohazard sign posted at Room entrances, but Biohazard labels must be posted on equipment used to store or handle Risk Group 2 materials.
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.	X		
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		This lab has a designated spill kit for biological spills.
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: Three BSCs in 1121C Date of Last Certifications: 2006

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: G. Shyamala Harris	Bio Use Auth or Reg #: B136-101705
Division: Life Sciences	Labs/Rms. Inspected: 74-344, 346, 384
Inspected By: B. King, R. Fisher, T. Linard with G. Shyamala Harris	Date Inspected: 7/13/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH “Guidelines for Research involving Recombinant DNA Molecules” (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	None of the four employees listed in the BUA and audited completed both EHS 739 Biosafety and EHS 730 Biowaste.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		Eating and drinking is conducted only in Room 379
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X		
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			
<i>Other</i>			
The PI reported that the project that used the Risk Group 2 biological materials (e.g., COS-7 cell line) is no longer conducted. The Biological Use Authorization B136 should be updated to reflect this change and changed to a Biological Use Registration.		X	

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.			
17. Liquid biohazardous waste is disinfected prior to drain disposal.			
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.			
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.			
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]			
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.			
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.			
23. Animals not involved in the work are not permitted in the laboratory.			
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.			
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.			
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.			
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.			
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 			Location of BSCs: Biosafety Cabinets in 385A are being turned over to the WYROBEK/MARCHETTI group.

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: M.H. Barcellos-Hoff	Bio Use Auth or Reg #: B099-100705
Division: Life Sciences	Labs/Rms. Inspected: 977-208, 209, 210, 211
Inspected By: B. King, R. Fisher, T. Linard, J. Krupa, L. Wong, Shraddha Ravani	Date: 7/24/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH “Guidelines for Research involving Recombinant DNA Molecules” (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X		6 out of 6 employees listed in the BUA and audited completed EHS739 Biosafety & EHS730 Blowaste
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		Lab has policy to allow drinks at desks in lab, but not combined with lab work. Food preparation at one designated sink.
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X		
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
<i>Other</i>			
The two vacuum flask trap apparatuses used in the biosafety cabinets in Room 211 do not have vacuum filters between the flask and the house vacuum system to prevent biological aerosols from entering the house system.		X	Install filters in the vacuum system (e.g., Whatman, VACU-GARD, Disposable Filters (Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737)

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X		
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X		Biohazard sign posted at Room entrances
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		Call Building Manager, who contacts the Mgt. Company.
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.	X		
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.	X		Needles are used with animals at Building 74. Signs are posted.
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: Two BSCs in 211 Date of Last Certification: 6/06

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X	X	Hepatitis B medical surveillance requirements (i.e., personnel targeted) defined in the BUA and ECP are not consistent.
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X	X	Biohazard sign posted at Room entrance. Biohazard labels are not posted on equipment used to store or grow Risk Group 2 materials.
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.	X		Contract laundry service is provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: 3 Biosafety Cabinets in Room 212 Date of Last Certification: 6/06

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Mina Bissell		Bio Use Auth or Reg #: B079-030306	
Division: Life Sciences	Labs/Rms. Inspected: BL2: 977-231, 235, 236. BL1: 977-224, 225		
Inspected By: B. King, R. Fisher, T. Linard, Genee Lee		Date: 7/26/06	
<i>Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH <u>Biosafety in Microbiological and Biomedical Laboratories, 4th ed.</u> and NIH "Guidelines for Research involving Recombinant DNA Molecules" (2002).</i>			
ALL BIOSAFETY LEVELS			
COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	6 out of 12 employees (50%) listed in the BUA and audited completed both EHS739 Biosafety & EHS730 Blowaste
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		Eating and drinking in office area only.
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X	X	The chair in BL2 tissue culture room236 has a cloth seat
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
COMPLIES			
COMPLIES	YES	NO	COMMENTS
<i>Other</i>			
The vacuum flask trap apparatuses used in the biosafety cabinets in Rooms 231 and 236 do not have vacuum filters between the flask and the house vacuum system to prevent biological aerosols from entering the house system.		X	Install filters in the vaccum system (e.g., Whatman, VACU-GARD, Disposable Filters (Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737)

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X		
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X	X	There is a biohazard sign posted at Room entrances, but biohazard labels must be posted on equipment used to store or grow Risk Group 2 materials.
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		Call Building Manager, who contacts the Mgt. Company.
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.	X		
23. Animals not involved in the work are not permitted in the laboratory.			N/A
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.	X		Needles are not used with biological materials.
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.			N/A
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: Two BSCs in 236 and one BSC in 245 Date of Last Certifications: June 2006

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Paul Yaswen		Bio Use Auth or Reg #: B051-030106	
Division: Life Sciences	Labs/Rms. Inspected: 977-239, 240, 242		
Inspected By: Bruce King, Ross Fisher with Paul Yaswen		Date: 7/26/06	
<i>Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH <u>Biosafety in Microbiological and Biomedical Laboratories</u>, 4th ed. and NIH "Guidelines for Research involving Recombinant DNA Molecules" (2002).</i>			
ALL BIOSAFETY LEVELS			
COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X*	* Two out seven employees (29%) listed in the BUA and audited completed all of the following courses: EHS 739 Biosafety , EHS 730 Biowaste, and EHS 735/738 Bloodborne Pathogen.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X		
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
COMPLIES			
YES			
NO			
<i>Other</i>			
Vacuum-flask apparatuses used at biosafety cabinets to trap aspirated culture solutions in Rooms 240 and 242 do not have in-line HEPA filters to protect the house vacuum system from aerosolized biological material.		X	Install a HEPA filter (e.g., Whatman, VACU-GARD, Disposable Filters (i.e., Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737).

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X	X	Two employees need to complete Hepatitis B medical surveillance requirements
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X		
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.	X		Contract laundry service is provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual, Biological Use Authorization, and Exposure Control Plan
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of Biosafety Cabinets (BSCs): (1) BSC 242, (2) BSC 240 Date of Last Certification: 6/06

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Martha Stampfer	Bio Use Auth or Reg #: B151-042106
Division: Life Sciences	Labs/Rms. Inspected: 73-001C, 108, 109, 110
Inspected By: B. King, R. Fisher, T. Linard, J. Krupa, L. Wong with Martha Stampfer and James Garbe	Date: 7/27/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH “Guidelines for Research involving Recombinant DNA Molecules” (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	One out three employees (33%) listed in the BUA and audited completed all of the following courses: EHS 739 Biosafety , EHS 730 Biowaste, and EHS 735/738 Bloodborne Pathogen.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X	X	One chair in BL2 room109 has cloth seat cushions.
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.	X		
<i>Other</i>			
The vacuum flask trap apparatuses used in the biosafety cabinets in Room 109 do not have vacuum filters between the flask and the house vacuum system to prevent biological aerosols from entering the house system.		X	Install filters in the vacuum system (e.g., Whatman, VACU-GARD, Disposable Filters (Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737)
The following sections of the ECP need to be changed: a) Section II, uncheck GROUP 2, and b) Section IVB, uncheck “we use safety needles.” The PI signed the ECP during this appraisal.		X	
<i>COMPLIES</i>			
<i>COMPLIES</i>			

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.		X	Complete Hepatitis B medical surveillance requirements for all employees
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X		
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.		X	No contract laundry service is provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual, Biological Use Authorization, and Exposure Control Plan.
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: BSCs in 73-109 Date of Last Certification: 9/15/05

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Tom Budinger	Bio Use Auth or Reg #: B161-072706
Division: Life Sciences	Labs/Rms. Inspected: 55-122(SPECT), 139(PET), 151(sink only)
Inspected By: B. King, R. Fisher, T. Linard, L. Wong, Susanne Baker	Date: 7/28/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH "Guidelines for Research involving Recombinant DNA Molecules" (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	One out of 5 employees (20%) listed in the BUA & ECP and audited completed all of the following courses: EHS 739 Biosafety, EHS 730 Biowaste, & EHS 735/738 Bloodborne Path.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		Surfaces are disinfected with bleach solution after each patient.
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.			N/A
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X		
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
<i>Other</i>			
As described in the DFI Bloodborne Pathogen (BBP) Exposure Control Plan (ECP), DFI is using butterfly devices (sharps) that do not include engineering sharps protection. The OSHA BBP Std. and ECP require that a re-evaluation of such devices be documented by the user group annually. A re-evaluation has not been conducted.		X	Document an annual evaluation of available sharps with engineered injury prevention.
The PI needs to review and sign the Exposure Control Plan when it is revised and annually.		X	Annual reviews are not documented. The ECP was recently revised but not signed.

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X	X	One person needs to complete their Hepatitis B medical surveillance requirement.
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X		
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.	X		Lab coat laundry service provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual, Biological Use Authorization B161, and operation-specific Exposure Control Plan
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 			N/A Location of Biosafety Cabinets: None

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Judith Campisi	Bio Use Auth or Reg #: B055-061306
Division: Life Sciences	Labs/Rms. Inspected: 84-155, 175
Inspected By: B. King, R. Fisher, T. Linard, J. Krupa, L. Wong with Judith Campisi and Ying Zou	Date: 7/28/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH "Guidelines for Research involving Recombinant DNA Molecules" (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	Two out of six employees (33%) listed in the BUA and audited completed all of the both EHS 739 Biosafety and EHS 730 Biowaste.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		Lab has policy to allow drinks at desks in lab, but not combined with lab work.
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. Procedures are performed carefully minimize the creation of aerosols	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X		
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.			N/A
<i>Other</i>			
One vacuum flask trap apparatus used in the biosafety cabinets in Room 175 does not have a vacuum filter between the flask and the house vacuum system to prevent biological aerosols from entering the house system.		X	Install a filter in the vacuum system (e.g., Whatman, VACU-GARD, Disposable Filters (Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737)
Bunsen burners in biosafety cabinets are not recommended due to known fire incidents. If burners are needed, burners with safety features should be used (e.g., Touch-O-Matic burner in the Baker biosafety cabinet SG133271 in 84-175)		X	Campisi group bunsen burners in two biosafety cabinets in Room 84-175 are potential fire risks (e.g., SG11462V and SG21357V)
COMPLIES			
YES NO			

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X	X	Plastic pipettes are used in the biosafety cabinet to aspirate materials. After use, the pipettes are placed in a cardboard box on the floor under the biosafety cabinet. These pipettes must be placed in rigid and leak-proof biohazardous waste container that is lined with a biohazard bag and has a tight-fitting lid. The container must have biohazard labels on the top and all sides.
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X		
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X	X	There is a biohazard sign posted at Room entrances, but Biohazard labels must be posted on equipment used to store or handle Risk Group 2 materials.
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.			Not observed during inspection
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.		X	No contract laundry service is provided.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.			Not appraised.
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization B055.
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X		Location of BSCs: 3 BSCs in 84-175 Date of Last Certification: 3/21/06

BIOSAFETY CONTAINMENT LABORATORY CHECKLIST

Lawrence Berkeley National Laboratory

EH&S – Biosafety Program

Principal Investigator: Bing Jap	Bio Use Auth or Reg #: B077-061506
Division: Life Sciences	Labs/Rms. Inspected: Donner 367, 368, 271, 330, 331
Inspected By: B. King, R. Fisher, T. Linard, J. Krupa, L. Wong with Bing Jap and Peter Walian	Date: 7/30/06

Biosafety containment requirements listed below are detailed in the LBNL Biosafety Manual and are based on requirements specified in the CDC/NIH Biosafety in Microbiological and Biomedical Laboratories, 4th ed. and NIH "Guidelines for Research involving Recombinant DNA Molecules" (2002).

ALL BIOSAFETY LEVELS

COMPLIES	YES	NO	COMMENTS
<i>Standard Microbiologic Practices and Training</i>			
1. Lab personnel understand biology of organisms used in the lab, have received training in aseptic technique, & completed required training.	X	X	Two out of six employees (33%) listed in the BUA and audited completed both EHS 739 Biosafety and EHS 730 Biowaste.
2. The lab has an emergency action plan that describes procedures in the event of an accident and the lab personnel are familiar with it.	X		
3. Access to lab is limited or restricted at the discretion of the lab PI.	X		
4. Work surfaces are decontaminated once a day and after any spill of viable material.	X		
5. All contaminated liquid is decontaminated before disposal. Solid medical waste is handled according to the BSL (autoclaved onsite or sent out for treatment)	X		
6. Mechanical pipetting devices are used; mouth pipetting is prohibited.	X		
7. Eating, drinking, smoking, and applying cosmetics are not permitted in the work areas. Food may be stored in cabinets or refrigerators designated and used for this purpose only. Food storage cabinets should be located outside of the work area.	X		Eating and drinking is conducted only in the break area.
8. Persons wash their hands after they handle viable materials or animals (after removing gloves) and before leaving the laboratory.	X		
9. Policies for safe handling of sharps are instituted.	X		
10. All procedures are performed carefully to minimize the creation of aerosols.	X		
<i>Laboratory Facilities</i>			
11. The lab is designed so that it can be easily cleaned.	X	X	The chair at the biosafety cabinet in 331 has a cloth seat.
12. Bench tops are impervious to water and resistant to the chemicals used in the area. Lab furniture is sturdy.	X		
13. Spaces between equipment are accessible for cleaning & are clean.	X		
14. Each lab contains a sink for hand washing. Hand soap is at the sink.	X		
15. Openable windows are fitted with fly screens.		X	Fly screens needed.
<i>Other</i>			
Lab coats are recommended at Biosafety Level 1		X	Lab coats are only sometimes worn at BL1.
Bunsen burners in biosafety cabinets are not recommended due to known fire incidents. If burners are needed, burners with safety features should be used.		X	Bunsen burner in biosafety cabinet in Room 331

BIOSAFETY LEVEL 2 (BSL-2) ONLY

COMPLIES	YES	NO	COMMENTS
Special Practices			
16. Solid biohazardous waste is placed into biohazard bags within a durable, leak-proof secondary container that is closed before leaving the laboratory. Full, sealed bags are then transferred to barrels at drop-off locations where the barrels are picked up weekly by LBNL's licensed, contracted medical waste hauler for final treatment.	X		
17. Liquid biohazardous waste is disinfected prior to drain disposal.	X		
18. The PI establishes policies and procedures whereby only persons who have been advised of the potential hazards and meet any specific entry requirements (e.g. immunization) enter the lab.	X		Completion of Hepatitis B medical surveillance requirements
19. A biohazard symbol is posted on the access doors. When special provisions for entry are required (e.g., immunization), the sign identifies the infectious agent(s), lists the name and telephone number of the PI or other responsible person(s), and indicates any special requirement(s) for entering. Biohazard labels are posted on equipment used to store or grow Risk Group 2 materials.	X	X	Biohazard sign posted at Room entrance, but Biohazard labels must be posted on equipment used to store or handle Risk Group 2 materials.
20. Personnel know requirement for an insect & rodent control program. [If pest control is needed, call Facilities' Work Request, x6274.]	X		
21. Lab coats, gowns, smocks, etc. are worn while working in the lab.	X		
22. A laundry service is provided for non-disposable lab coats, gowns, smocks, etc.		X	Contract lab coat laundry service is required.
23. Animals not involved in the work are not permitted in the laboratory.	X		
24. Skin contamination with infectious materials is avoided. Gloves are worn when handling experimental animals and when skin contact with the agent is unavoidable.	X		
25. Hypodermic needles are used only for parental injection and aspiration of fluids from lab animals and diaphragm bottles. Only needle-locking syringes, safety needles, or disposal syringe-needle units are used for the injection or aspiration of infectious fluids.			N/A
26. Needles are <u>not</u> bent, sheared, replaced in the needle sheath or guard, or removed from the syringe following use. Used needles and syringes are placed in a puncture-resistant "sharps" container and, when 2/3 full, placed at a medical waste drop-off location for pick up by LBNL's contracted medical waste vendor.	X		
27. Spills and accidents that result in overt exposures to infectious or potentially infectious materials are immediately reported to the lab PI.	X		
28. When appropriate, baseline serum samples for laboratory and other at-risk personnel are collected and stored.			N/A
29. A biosafety manual and/or exposure control plan (as applicable) is prepared or adopted. Personnel are advised of special hazards and are required to read instructions on practices and procedures.	X		LBNL Biosafety Manual and Biological Use Authorization
Containment Equipment			
30. Biosafety cabinets (Class I or II) or other appropriate personal protective or physical containment devices are used whenever: <ul style="list-style-type: none"> a. Procedures with a high potential for creating aerosols are conducted (e.g. centrifuging, grinding, blending, vigorous shaking or mixing, sonic disruption, opening pressure or vacuum sealed vessels, intranasal inoculation of animals, harvesting infected tissues, etc.) b. High concentrations or large volumes of infectious agents are used. (Such materials may be centrifuged in the open lab if sealed heads or centrifuge safety cups are used and if they are opened only in a biosafety cabinet. 	X ¹	X ²	<ul style="list-style-type: none"> 1) Biosafety cabinet in Room 331 was last certified 1/9/06. 2) Higher concentrations of HeLa cells are homogenized in the lab hood in Room 330. A biosafety cabinet must be used (e.g., Room 331).

Authorization Type: Radiological Authorization

Date: 7/20/2006

Location(s): Building 1 0116

Authorization Number/Reference: **LAS 010**

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		GERT only for LAS
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			✓
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			✓
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			✓
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			✓
Exposure Control: shielding, dosimetry, PPE, food/drink			✓
Posting & Labeling (rooms), sinks, equipment	✓		

Authorization Type: Radiological Authorization

Date: 7/20/2006

Location(s): Building 1 0322, 0361, 0364

Authorization Number/Reference: **RWA 1001**

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			✓
Energized Work Permits (EWP - A, B)			↓
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			✓
Biohazards			↓
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			↓
Radiation Protection			
Radioisotope Journal up to date	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		

Equipment Authorization - Certification/calibration/logs	REVIEWED		
	Yes	No	Not Obs/App
Autoclave			✓
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			✓
Waste Management			
WAA compliance			✓
SAA compliance			✓
Environmental Services			
Air emissions			✓
Sanitary sewer discharge			✓
Storage tanks - aboveground or underground			✓
Storm water management			✓
Treatment systems			✓
Field Interviews			
Knowledge of authorizations, procedures, etc.	✓		
Knowledge of safety systems	✓		
On-the-job training	✓		
Safety concerns, how to communicate concerns	✓		
Comments			
<u>Excellent RIT compliance. All required surveys properly performed</u>			
<u>and documented. Neat/orderly workspace</u>			
Performed By: Chris Donahue <u>Chris Donahue</u>		Date: <u>9/8/06</u>	
Name / Signature			
Reviewed By: Ross Fisher <u>Ross Fisher</u>		Date: <u>9/11/06</u>	
Name / Signature IFA Team Leader			

Authorization Type: Radiological Authorization

Date: 7/20/2006

Location(s): Building 1 0373

Authorization Number/Reference: RWA 1004

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			✓
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			✓
Work Area Occupational and Environmental Safety and Health			
Access and egress			✓
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			✓
Radiation Protection			
Radioisotope Journal up to date	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		Controlled

Area sign needed for 1-367.

Authorization Type: Radiological Authorization

Date: 7/20/2006

Location(s): Building 1 0366

Authorization Number/Reference: X-Ray 001-366

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			✓
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			↓
Work Area Occupational and Environmental Safety and Health			
Access and egress			✓
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			↓
Radiation Protection			
Radioisotope Journal up to date - <i>X-Ray Journal</i>	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			✓
Exposure Control: shielding, dosimetry, PPE, food/drink			✓
Posting & Labeling: <u>rooms</u> , <u>sinks</u> , <u>equipment</u>	✓		

Equipment Authorization - Certification/callbration/logs	REVIEWED		
	Yes	No	Not Obs/App
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			↓
Other			
Waste Management			
WAA compliance			✓
SAA compliance			✓
Environmental Services			
Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			↓
Field Interviews			
Knowledge of authorizations, procedures, etc.			✓
Knowledge of safety systems			✓
On-the-job training			✓
Safety concerns, how to communicate concerns			✓
Comments			
Update X-Ray Journal Needed if machine remains			
active. Bob Fairchild, x-ray program manager, was			
notified.			
Performed By: Chris Donahue <i>C. Donahue</i>		Date: 9-6-06	
Name / Signature			
Reviewed By: Ross Fisher <i>Ross Fisher</i>		Date: 9-6-06	
Name / Signature IFA Team Leader			

Authorization Type: Radiological Authorization

Date: 7/20/2006

Location(s): Building 55 0116, 120, 122, 126, 128, 136, 139, 139hall, 151

Authorization Number/Reference: **RWA 1010**

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date <i>Excellent</i>	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		

REVIEWED

Equipment Authorization - Certification/calibration/logs

Yes No Not Obs/App

Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			

Waste Management

WAA compliance			
SAA compliance			

Environmental Services

Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			

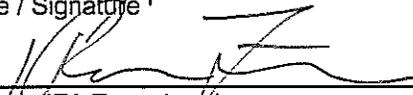
Field Interviews

Knowledge of authorizations, procedures, etc.			
Knowledge of safety systems			
On-the-job training			
Safety concerns, how to communicate concerns			

Comments

Performed By: Chris Donahue 
 Name / Signature

Date: 7/21/06

Reviewed By: Ross Fisher 
 Name / Signature IFA Team Leader

Date: 7/21/06

Authorization Type: Radiological Authorization

Date: 7/20/2006

Location(s): Building 55 - 120, 126, 128, 134, 139, 139hall, 151

Authorization Number/Reference: **RWA 1013**

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed - <i>new RWA outing</i>	✓		
Authorization current - <i>per database / RPE files</i>	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date - <i>RWA to be filed</i>	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping <i>improvement</i>	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		

				REVIEWED		
Equipment Authorization - Certification/calibration/logs				Yes	No	Not Obs/App
Autoclave						
Biosafety Cabinet						
Clean Room						
Crane Hoist						
Eyewash / Safety Shower						
Fire Extinguishers						
Flammables Cabinet/Refrigerator						
Fork Lift / Heavy Equipment Operator						
Fume Hood						
Glove Box						
Hand and Shoe Counter						
Local Exhaust System						
Monitoring / Alarm System						
Photoprocessing Equipment						
Sonicator						
Ultracentrifuge						
Other						
Waste Management						
WAA compliance						
SAA compliance						
Environmental Services						
Air emissions						
Sanitary sewer discharge						
Storage tanks - aboveground or underground						
Storm water management						
Treatment systems						
Field Interviews						
Knowledge of authorizations, procedures, etc.						
Knowledge of safety systems						
On-the-job training						
Safety concerns, how to communicate concerns						
Comments						
Performed By: Chris Donahue <i>C. A. Donahue</i>				Date: <u>7-21-06</u>		
Name / Signature						
Reviewed By: Ross Fisher <i>Ross Fisher</i>				Date: <u>7-21-06</u>		
Name / Signature IFA Team Leader						

Authorization Type: Radiological Authorization

Date: 7/20/2006

Location(s): Building 55 - 120, 122, 134, 139A, 139hall, 151, 200

Authorization Number/Reference: **RWA 1041**

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		

Authorization Type: Radiological Authorization

Date: 7/20/2006

Location(s): Building 055 134, 139

Authorization Number/Reference: SSA 172

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			✓
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			↓
Work Area Occupational and Environmental Safety and Health			
Access and egress			✓
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			↓
Radiation Protection			
Radioisotope Journal up to date <i>SSA Journal</i>	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			✓
Exposure Control: <u>shielding</u> , dosimetry, PPE, food/drink	✓		
Posting & Labeling: <u>rooms</u> , sinks, equipment	✓		

Authorization Type: Radiological Authorization

Date: 7/20/2006

Location(s): Building 055 122

Authorization Number/Reference: X-Ray 055-122

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Authorization Type: Radiological Authorization

Date: 7/20/2006

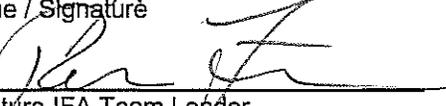
Location(s): Building 055 125

Authorization Number/Reference: X-Ray 055-125

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

REVIEWED			
Equipment Authorization - Certification/calibration/logs	Yes	No	Not Obs/App
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance			
Environmental Services			
Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.			
Knowledge of safety systems			
On-the-job training			
Safety concerns, how to communicate concerns			
Comments			
Performed By: Chris Donahue			Date: 7-21-06
	Name / Signature		
Reviewed By: Ross Fisher			Date: 7/21/06
	Name / Signature IFA Team Leader		

Authorization Type: Radiological Authorization

Date: 7/20/2006

Location(s): Building 056 100, 101

Authorization Number/Reference: RWA 1077

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping (<i>poor housekeeping</i>)	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		

Authorization Type: Radiological Authorization

Date: 7/20/2006

Location(s): Building 064 234

Authorization Number/Reference: RWA 1102

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date <i>EXCELLENT!</i>	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		

V = S

Authorization Type: Radiological Authorization

Date: 7/21/2006

Location(s): Building 070A 1103

Authorization Number/Reference: X-Ray 070A-1103

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			↓
Energized Work Permits (EWP - A, B)			↓
Fire Safety Permit			↓
Lock Out Tag Out (LOTO)			↓
Energized Work Permits (EWP - A, B)			↓
Permit to Penetrate Surface			↓
Work Area Occupational and Environmental Safety and Health			
Access and egress			↓
Biohazards			↓
Chemical Hygiene and Safety			↓
Chemical Management System status			↓
Compressed gasses			↓
Confined space			↓
Cryogenic			↓
Electrical			↓
Energy			↓
Ergonomic considerations			↓
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			↓
Elevated locations and guarding			↓
Lasers			↓
Lead			↓
Machine tools			↓
PPE			↓
Pressure			↓
Soldering			↓
Thermal			↓
Walking and working surfaces			↓
Welding			↓
Other Hazards:			↓
Radiation Protection			
Radioisotope Journal up to date - <i>X-ray Journal</i>	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			✓
Exposure Control: shielding, dosimetry, PPE, food/drink			✓
Posting & Labeling <u>rooms</u> , sinks, equipment	✓		

REVIEWED			
	Yes	No	Not Obs/App
Equipment Authorization - Certification/calibration/logs			
Autoclave			✓
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			↓
Waste Management			
WAA compliance			✓
SAA compliance			✓
Environmental Services			
Air emissions			✓
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			↓
Field Interviews			
Knowledge of authorizations, procedures, etc.	✓		
Knowledge of safety systems	✓		
On-the-job training	✓		
Safety concerns, how to communicate concerns	✓		
Comments			
<i>Excellent compliance and knowledge of RPE procedures and requirements for x-ray machine use.</i>			
Performed By: Chris Donahue <i>/C. A. Donahue</i>		Date: <u>8/2/06</u>	
Name / Signature			
Reviewed By: Ross Fisher <i>/R. Fisher</i>		Date: <u>8/2/06</u>	
Name / Signature IFA Team Leader			

Authorization Type: Radiological Authorization

Date: 7/21/2006

Location(s): Building 70A 1115

Authorization Number/Reference: RWA 1018

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			↓
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			↓
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		

Authorization Type: Radiological Authorization

Date: 7/21/2006

Location(s): Building 74 312, 330, 330A, 344, 350

Authorization Number/Reference: **RWA 1063**

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			↓
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			↓
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		

Equipment Authorization - Certification/calibration/logs	REVIEWED		
	Yes	No	Not Obs/App
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			✓
Waste Management			
WAA compliance			✓
SAA compliance			✓
Environmental Services			
Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			✓
Field Interviews			
Knowledge of authorizations, procedures, etc.			✓
Knowledge of safety systems			✓
On-the-job training			✓
Safety concerns, how to communicate concerns			✓
Comments			
<p><i>PI did not attend walkthrough. Outstanding. User-developed On-the-job training course outline. Detailed description of 1063-specific rod controls and procedures. Best in field.</i></p>			
Performed By: Chris Donahue <i>C.D. Donahue</i> Name / Signature		Date: <u>8-2-06</u>	
Reviewed By: Ross Fisher <i>Ross Fisher</i> Name / Signature IFA Team Leader		Date: <u>8/2/06</u>	

Authorization Type: Radiological Authorization

Date: 7/21/2006

Location(s): Building 074 144A

Authorization Number/Reference: SSA 171

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	S		
Authorization current	S		
All users listed on authorization	S		
All users trained in accordance with authorization requirements	S		
Authorization accurately reflects work being conducted	S		
Authorization posted / available in work area	S		
Other:			
Hazardous Work Permits			
Confined Space Permit			✓
Energized Work Permits (EWP - A, B)			↓
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			✓
Biohazards			↓
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date SSA Journal	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			✓
Exposure Control: shielding, dosimetry, PPE, food/drink			✓
Posting & Labeling rooms, sinks, equipment	✓		

				REVIEWED		
Equipment Authorization - Certification/calibration/logs				Yes	No	Not Obs/App
Autoclave						✓
Biosafety Cabinet						
Clean Room						
Crane Hoist						
Eyewash / Safety Shower						
Fire Extinguishers						
Flammables Cabinet/Refrigerator						
Fork Lift / Heavy Equipment Operator						
Fume Hood						
Glove Box						
Hand and Shoe Counter						
Local Exhaust System						
Monitoring / Alarm System						
Photoprocessing Equipment						
Sonicator						
Ultracentrifuge						
Other						✓
Waste Management						
WAA compliance						✓
SAA compliance						✓
Environmental Services						
Air emissions						
Sanitary sewer discharge						
Storage tanks - aboveground or underground						
Storm water management						
Treatment systems						↓
Field Interviews						
Knowledge of authorizations, procedures, etc.		S				
Knowledge of safety systems		S				
On-the-job training		S				
Safety concerns, how to communicate concerns		S				
Comments						
<p><i>This SSA is managed by Tony Lenard. He provides comprehensive OJT and maintains all required records, as specified in the SSA.</i></p> <p><i>Excellent compliance.</i></p>						
Performed By: <u>Chris Donahue / C. A. Donahue</u> Name / Signature				Date: <u>9/9/06</u>		
Reviewed By: <u>Ross Fisher</u> Name / Signature IFA Team Leader				Date: <u>9/13/06</u>		

Authorization Type: Radiological Authorization

Date: 7/21/2006

Location(s): Building 074 131

Authorization Number/Reference: SSA 173

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	S		
Authorization current	S		
All users listed on authorization	S		
All users trained in accordance with authorization requirements	S		
Authorization accurately reflects work being conducted	S		
Authorization posted / available in work area	S		
Other:			
Hazardous Work Permits			
Confined Space Permit			✓
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			✓
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date <i>SSJ</i>	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			✓
Exposure Control: shielding, dosimetry, PPE, food/drink			✓
Posting & Labeling: <u>rooms</u> , sinks, equipment <i>storage area</i>	✓		

Authorization Type: Radiological Authorization

Date: 7/21/2006

Location(s): Building 074 344

Authorization Number/Reference: X-Ray 074-344

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

	REVIEWED		
	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			✓
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			✓
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date - <i>X-ray Journal</i>	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			✓
Exposure Control: <i>shielding</i> , dosimetry, PPE, food/drink	✓		✓
Posting & Labeling: <i>rooms</i> , sinks, equipment	✓		

Authorization Type: Radiological Authorization

Date: 7/21/2006

Location(s): Building 84 157, B74 330

Authorization Number/Reference: RWA 1049

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			↓ ✓
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			↓
Work Area Occupational and Environmental Safety and Health			
Access and egress			↓ ✓
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			↓
Radiation Protection			
Radioisotope Journal up to date	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		

Authorization Type: Radiological Authorization

Date: 7/21/2006

Location(s): Building 84 153, 155, 161; B74 238C

Authorization Number/Reference: **RWA 1085**

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			✓
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			✓
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		

				REVIEWED		
Equipment Authorization - Certification/calibration/logs	Yes	No	Not Obs/App			
Autoclave			✓			
Biosafety Cabinet						
Clean Room						
Crane Hoist						
Eyewash / Safety Shower						
Fire Extinguishers						
Flammables Cabinet/Refrigerator						
Fork Lift / Heavy Equipment Operator						
Fume Hood						
Glove Box						
Hand and Shoe Counter						
Local Exhaust System						
Monitoring / Alarm System						
Photoprocessing Equipment						
Sonicator						
Ultracentrifuge						
Other						
Waste Management						
WAA compliance			✓			
SAA compliance			✓			
Environmental Services						
Air emissions						
Sanitary sewer discharge						
Storage tanks - aboveground or underground						
Storm water management						
Treatment systems						
Field Interviews						
Knowledge of authorizations, procedures, etc.			✓	*		
Knowledge of safety systems			✓			
On-the-job training			✓			
Safety concerns, how to communicate concerns			✓			
Comments						
<u>Orderly; clean work area in room separated from</u>						
<u>non-rad work activities.</u>						
<u>* PI did not attend</u>						
<u>Division Safety Coordinator was knowledgeable of</u>						
<u>work controls.</u>						
Performed By: Chris Donahue / <u>C. A. Donahue</u>				Date: <u>8-2-06</u>		
Name / Signature						
Reviewed By: Ross Fisher / <u>[Signature]</u>				Date: <u>8-2-06</u>		
Name / Signature IFA Team Leader						

Authorization Type: Radiological Authorization

Date: 7/25/2006 *7/26/06 RWJ*

Location(s): Building 977 205

Authorization Number/Reference: **RWA 1050**

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current - <i>inactive status</i> (D)	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		

Authorization Type: Radiological Authorization

Date: 7/25/2006

Location(s): Building 977 - 0205, 0240

7/26/06 RUC

Authorization Number/Reference: RWA 1062

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED			
	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed	✓		
Authorization current <i>- inactive status ①</i>	✓		
All users listed on authorization	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Look Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping	✓		
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		
Posting & Labeling: rooms, sinks, equipment	✓		

Equipment Authorization - Certification/calibration/logs	REVIEWED		
	Yes	No	Not Obs/App
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance			
Environmental Services			
Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.			
Knowledge of safety systems			
On-the-job training			
Safety concerns, how to communicate concerns			
Comments			
<p><i>RWA 1062 is in "inactive" status. All areas were posted as required and the current ReIA was on file. No active handling or receipt of rad material is permitted in "inactive" status.</i></p>			
<p>Performed By: Chris Donahue <i>C.A. Donahue</i> Date: <u>7/26/06</u> <small>Name / Signature</small></p>			
<p>Reviewed By: Ross Fisher <i>R. Fisher</i> Date: <u>7/26/06</u> <small>Name / Signature IFA Team Leader</small></p>			

Authorization Type: Radiological Authorization

Date: *7/26/06* *mwf*
 Date: 7/25/2006

Location(s): Building 977 203

Authorization Number/Reference: X-Ray 977-203

S = Satisfactory; IF = Needs Improvement (finding); IR = Needs Improvement (recommendation)

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed	✓		
Authorization current	✓		
All users listed on authorization (1)	✓		
All users trained in accordance with authorization requirements	✓		
Authorization accurately reflects work being conducted	✓		
Authorization posted / available in work area	✓		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radiolotope Journal up to date - <i>X-ray Journal</i>	✓		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			✓
Exposure Control: shielding, dosimetry, PPE, food/drink	✓		<i>applicable</i>
Posting & Labeling: rooms, sinks, equipment	✓		

	REVIEWED		
Equipment Authorization - Certification/calibration/logs	Yes	No	Not Obs/App
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance			
Environmental Services			
Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.			
Knowledge of safety systems			
On-the-job training			
Safety concerns, how to communicate concerns			
Comments			
(1) X-ray authorization radiation workers include system supervisors, equipment maintenance and system trainees only. X-ray users are not specifically listed on authorization because they are not "rad workers" per DOE.			
Performed By: Chris Donahue <i>Chris Donahue</i> Name / Signature		Date: 7/28/06	
Reviewed By: Ross Fisher <i>Ross Fisher</i> Name / Signature IFA Team Leader		Date: 7/26/06	

Appendix D - Field Inspection Checklist

Authorization Type: Activity Hazard Document (AHD)

See Radiological Field Inspection Sheet for 7/21/06

Date: _____

Location: B074 - 131

Authorization Number/Reference: **AHD 203 - Large Gamma Irradiator**

S = Satisfactory; **IF** = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

REVIEWED

Administrative	Yes	No	Not Obs/App
Authorization approved and signed			
Authorization current			
All users listed on authorization			
All users trained in accordance with authorization requirements			
Authorization accurately reflects work being conducted			
Authorization posted / available in work area			
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gases			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date	See Radiological Field Inspection Guide for 7/21/06		
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Checklist

		REVIEWED		
Equipment Authorization - Certification/calibration/logs	Yes	No	Not Obs/App	
Autoclave				
Biosafety Cabinet				
Clean Room				
Crane Hoist				
Eyewash / Safety Shower				
Fire Extinguishers				
Flammables Cabinet/Refrigerator				
Fork Lift / Heavy Equipment Operator				
Fume Hood				
Glove Box				
Hand and Shoe Counter				
Local Exhaust System				
Monitoring / Alarm System				
Photoprocessing Equipment				
Sonicator				
Ultracentrifuge				
Other				
Waste Management				
WAA compliance				
SAA compliance				
Environmental Services				
Air emissions				
Sanitary sewer discharge				
Storage tanks - aboveground or underground				
Storm water management				
Treatment systems				
Field Interviews				
Knowledge of authorizations, procedures, etc.				
Knowledge of safety systems				
On-the-job training				
Safety concerns, how to communicate concerns				
Comments				
The large gamma irradiator Sealed Source Authorization was reviewed on 7/21/06 by Chris Donahue and found to be in full compliance.				
It is suggested that the AHD authorization for this device be inactivated as it is covered by the radiological authorization.				
Performed By: n/a		Date: _____		
Name / Signature				
Reviewed By: Ross Fisher		Date: 7/21/06		
Name / Signature IFA Team Leader				

Appendix D - Field Inspection Checklist

Authorization Type: Activity Hazard Document (AHD)

Date: 7/31/06

Location: B055 - 208/214

Authorization Number/Reference: **AHD 209 - Hydrogen Chloride Gas**

S = Satisfactory; IF = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

REVIEWED

	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed	S		
Authorization current		IF	
All users listed on authorization	S		
All users trained in accordance with authorization requirements	S		
Authorization accurately reflects work being conducted	S		
Authorization posted / available in work area	S		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gases			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Checklist

	REVIEWED		
	Yes	No	Not Obs/App
Equipment Authorization - Certification/calibration/logs			
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers	S		
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood	S		
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance			
Environmental Services			
Air emissions			
Sanitary sewer discharge	S		
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.	S		
Knowledge of safety systems	S		
On-the-job training			
Safety concerns, how to communicate concerns	S		
Comments			
Authorization Information Not Current - The AHD contains some out-of-date information. The AHD was reported to be renewed in 2006. Appraisal copy was from AHD database and is a 2005 renewal.			
In general, housekeeping and lab technique is above standard.			
Performed By: Bruce King <i>Bruce W. King</i> Name / Signature		Date: 7/31/06	
Reviewed By: Ross Fisher <i>R. Fisher</i> Name / Signature IFA Team Leader		Date: 7/31/06	

Appendix D - Field Inspection Checklist

Authorization Type: Activity Hazard Document (AHD)

Date: 7/31/06

Location: B055 - 208/214

Authorization Number/Reference: **AHD 210 - Ammonia Compressed Gas**

S = Satisfactory; **IF** = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

REVIEWED

	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed	S		
Authorization current		IF	
All users listed on authorization	S		
All users trained in accordance with authorization requirements	S		
Authorization accurately reflects work being conducted	S		
Authorization posted / available in work area	S		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gases		IF	
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Checklist

	REVIEWED		
	Yes	No	Not Obs/App
Equipment Authorization - Certification/calibration/logs			
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers	S		
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood	S		
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance			
Environmental Services			
Air emissions			
Sanitary sewer discharge	S		
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.	S		
Knowledge of safety systems	S		
On-the-job training			
Safety concerns, how to communicate concerns	S		
Comments			
<p>Authorization Information Not Current - The AHD contains some out-of-date information. The AHD was reported to be renewed in 2006. Appraisal copy was from AHD database and is a 2005 renewal.</p> <hr/> <p>Two cylinders of compressed ammonia gas (lecture bottles) were observed in a steel drum in the middle of room 55-208. Ammonia is classified as a health hazard gas and must be stored inside exhausted enclosures.</p> <hr/> <p>In general, housekeeping and lab technique is above standard.</p> <hr/>			
Performed By: Bruce King <i>Bruce W. King</i> Name / Signature		Date: 7/31/06	
Reviewed By: Ross Fisher <i>Ross Fisher</i> Name / Signature IFA Team Leader		Date: 7/31/06	

Appendix D - Field Inspection Checklist

Authorization Type: Activity Hazard Document (AHD)

Date: 7/31/06

Location: B055 - 208/214

Authorization Number/Reference: **AHD 211 - Carbon Monoxide Compressed Gas**

S = Satisfactory; IF = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

REVIEWED

	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed	S		
Authorization current		IF	
All users listed on authorization	S		
All users trained in accordance with authorization requirements	S		
Authorization accurately reflects work being conducted	S		
Authorization posted / available in work area	S		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gases		IF	
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Checklist

	REVIEWED		
	Yes	No	Not Obs/App
Equipment Authorization - Certification/calibration/logs			
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers	S		
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood	S		
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance			
Environmental Services			
Air emissions			
Sanitary sewer discharge	S		
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.	S		
Knowledge of safety systems	S		
On-the-job training			
Safety concerns, how to communicate concerns	S		
Comments			
<p>Authorization Information Not Current - The AHD contains some out-of-date information. The AHD was reported to be renewed in 2006. Appraisal copy was from AHD database and is from 1995.</p> <hr/> <p>One cylinder of carbon monoxide gas (30 lbs) was observed in a steel drum in the middle of Room 55-208. Carbon monoxide is classified as a health hazard gas and must be stored inside exhausted enclosures.</p> <hr/> <p>In general, housekeeping and lab technique is above standard.</p> <hr/>			
Performed By: Bruce King <i>Bruce W. King</i> Name / Signature		Date: 7/31/06	
Reviewed By: Ross Fisher <i>Ross Fisher</i> Name / Signature IFA Team Leader		Date: 7/31/06	

Appendix D - Field Inspection Checklist

Authorization Type: Activity Hazard Document (AHD)

Date: 7/31/2006

Location(s): B056 - 101

Authorization Number/Reference: **AHD 231 Fluorine Compressed Gas**

S = Satisfactory; IF = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

REVIEWED

	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed	S		
Authorization current		IF	
All users listed on authorization	S		
All users trained in accordance with authorization requirements	S		
Authorization accurately reflects work being conducted	S		
Authorization posted / available in work area	S		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gases			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Checklist

Authorization Type: Activity Hazard Document (AHD)

Date: 7/31/06

Location: B055 - 208

Authorization Number/Reference: **AHD BE1016 - Water Reactive Solvent Stills**

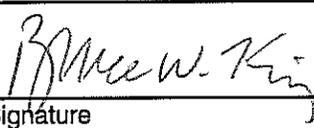
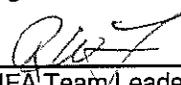
S = Satisfactory; **IF** = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

REVIEWED

	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed	S		
Authorization current		IF	
All users listed on authorization	S		
All users trained in accordance with authorization requirements	S		
Authorization accurately reflects work being conducted	S		
Authorization posted / available in work area	S		
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gases			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Checklist

	REVIEWED		
	Yes	No	Not Obs/App
Equipment Authorization - Certification/calibration/logs			
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower (EWSS)		IF	
Fire Extinguishers	S		
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood	S		
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other - Fire Door Use		IF	
Waste Management			
WAA compliance			
SAA compliance			
Environmental Services			
Air emissions			
Sanitary sewer discharge	S		
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.	S		
Knowledge of safety systems	S		
On-the-job training			
Safety concerns, how to communicate concerns	S		
Comments			
<p>Authorization Information Not Current - The AHD contains some out-of-date information. The AHD was reported to be renewed in 2006. Appraisal copy was from AHD database and is a 2005 renewal.</p> <p>In general, housekeeping and lab technique is above standard.</p> <p>The operations conducted under AHD BE1016 require an EWSS in the lab. The AHD describes the work as being conducted in Rm 214 and includes the EWSS in 214 in the AHD Emergency Procedures.</p> <p>The fire door between the B55-208 lab and the corridor was propped open defeating the fire door rating. Propping the door open also blocks access to the emergency shower handle. The shower must be accessible due to the chemicals used in this lab.</p>			
Performed By: <u>Bruce King</u> 		Date: <u>7/31/06</u>	
Name / Signature			
Reviewed By: <u>Ross Fisher</u> 		Date: <u>7/31/06</u>	
Name / Signature IFA Team Leader			

Appendix D - Field Inspection Guide

Authorization Type: Activity Hazard Document (AHD)

Date:

Date: 7/31/06

Location: B055 - 214

Authorization Number/Reference: **AHD 3144 - Azidohexapyranose Preparation**

S = Satisfactory; **IF** = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

REVIEWED

	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed			
Authorization current			
All users listed on authorization			
All users trained in accordance with authorization requirements			
Authorization accurately reflects work being conducted			
Authorization posted / available in work area			
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Energized Work Permits (EWP - A, B)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gases			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Guide

	REVIEWED		
	Yes	No	Not Obs/App
Equipment Authorization - Certification/calibration/logs			
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance			
Environmental Services			
Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.			
Knowledge of safety systems			
On-the-job training			
Safety concerns, how to communicate concerns			
Comments			
Work under this AHD is completed. Synthesis is no longer in progress.			
Performed By: Bruce King <i>Bruce W. King</i> Name / Signature		Date: 7/31/06	
Reviewed By: Ross Fisher <i>Ross Fisher</i> Name / Signature IFA Team Leader		Date: 7/31/2006	

Appendix D - Field Inspection Guide

Authorization Type: Satellite Accumulation Areas (SAA)

Date: 7/17/2006

Location(s): B001 - 116, 160H, 260, 267, 316,

Authorization Number/Reference: SAA, Building, Room

322, 330, 358, 364, 366,

S = Satisfactory; **IF** = Needs Improvement - FINDING;

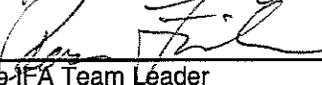
373, Loading Dock

IR = Needs Improvement - RECOMMENDATION

REVIEWED

	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed			
Authorization current			
All users listed on authorization			
All users trained in accordance with authorization requirements			
Authorization accurately reflects work being conducted			
Authorization posted / available in work area			
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Guide

	REVIEWED		
	Yes	No	Not Obs/App
Equipment Authorization - Certification/calibration/logs			
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance	S		
Environmental Services			
Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.			
Knowledge of safety systems			
On-the-job training			
Safety concerns, how to communicate concerns			
Comments			
SAA / RWCA / MWSAA inspected (11 / 3 / 0)			
All storage areas were compliant (100% pass rate)			
Performed By: Amy Tanouye <div style="text-align: center;">  Name / Signature </div>	Date: 7/17/06		
Reviewed By: Ross Fisher <div style="text-align: center;">  Name / Signature IFA Team Leader </div>	Date: 7/17/06		

Appendix D - Field Inspection Guide

Authorization Type: Satellite Accumulation Areas (SAA)

Date: 7/17/2006

Location(s): B055 - 116, 118, 120, 127, 151,
208, 214

Authorization Number/Reference: SAA, Building, Room

S = Satisfactory; **IF** = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

	REVIEWED		
Administrative	Yes	No	Not Obs/App
Authorization approved and signed			
Authorization current			
All users listed on authorization			
All users trained in accordance with authorization requirements			
Authorization accurately reflects work being conducted			
Authorization posted / available in work area			
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Guide

Authorization Type: Satellite Accumulation Areas (SAA)

Date: 7/17/2006

Location(s): B064 - 102, 223, 224, 234

Authorization Number/Reference: SAA, Building, Room

S = Satisfactory; **IF** = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

REVIEWED

	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed			
Authorization current			
All users listed on authorization			
All users trained in accordance with authorization requirements			
Authorization accurately reflects work being conducted			
Authorization posted / available in work area			
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Guide

	REVIEWED		
	Yes	No	Not Obs/App
Equipment Authorization - Certification/calibration/logs			
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance	S		
Environmental Services			
Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.			
Knowledge of safety systems			
On-the-job training			
Safety concerns, how to communicate concerns			
Comments			
SAA / RWCA / MWSAA inspected (4 / 1 / 0)			
All storage areas were compliant (100% pass rate)			
Performed By: Amy Tanouye  _____ Name / Signature	Date:	7/17/06	
Reviewed By: Ross Fisher  _____ Name / Signature IFA Team Leader	Date:	7/17/06	

Appendix D - Field Inspection Guide

Authorization Type: Satellite Accumulation Areas (SAA)

Date: 7/24/2006

Location(s): B977 - 116, 204, 209, 210, 217

Authorization Number/Reference: SAA, Building, Room

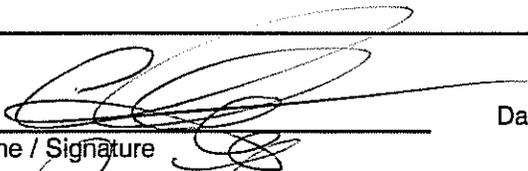
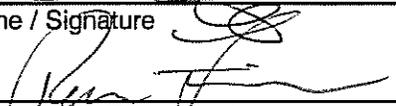
231, 240

S = Satisfactory; **IF** = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

	REVIEWED		
Administrative	Yes	No	Not Obs/App
Authorization approved and signed			
Authorization current			
All users listed on authorization			
All users trained in accordance with authorization requirements			
Authorization accurately reflects work being conducted			
Authorization posted / available in work area			
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Guide

	REVIEWED		
	Yes	No	Not Obs/App
Equipment Authorization - Certification/calibration/logs			
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance	S		
Environmental Services			
Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.			
Knowledge of safety systems			
On-the-job training			
Safety concerns, how to communicate concerns			
Comments			
SAA / RWCA / MWSAA inspected (7 / 0 / 0)			
All storage areas were compliant (100% pass rate)			
Performed By: Chan Ho Yi 		Date: 7/24/06	
Name / Signature			
Reviewed By: Ross Fisher 		Date: 7/24/06	
Name / Signature IFA Team Leader			

Appendix D - Field Inspection Guide

Authorization Type: Satellite Accumulation Areas (SAA)

Date: 7/25/2006

Location(s): B073 - 109

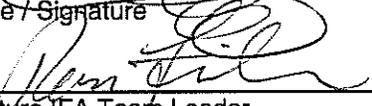
Authorization Number/Reference: SAA, Building, Room

S = Satisfactory; **IF** = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

	REVIEWED		
	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed			
Authorization current			
All users listed on authorization			
All users trained in accordance with authorization requirements			
Authorization accurately reflects work being conducted			
Authorization posted / available in work area			
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Guide

	REVIEWED		
	Yes	No	Not Obs/App
Equipment Authorization - Certification/calibration/logs			
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance	S		
Environmental Services			
Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.			
Knowledge of safety systems			
On-the-job training			
Safety concerns, how to communicate concerns			
Comments			
SAA / RWCA / MWSAA inspected (1 / 0 / 0)			
All storage areas were compliant (100% pass rate)			
Performed By: Chan Ho Yi			Date: 7/25/06
	Name / Signature		
Reviewed By: Ross Fisher			Date: 7/25/06
	Name / Signature IFA Team Leader		

Appendix D - Field Inspection Guide

Authorization Type: Satellite Accumulation Areas (SAA)

Date: 7/25/2006

Location(s): B074 - 166, 178, 217, 252, 265,
265A, 312, 330, 348, 378, 384,
385, 3050, 3080, 3110

Authorization Number/Reference: SAA, Building, Room

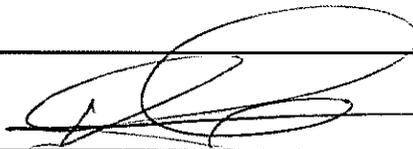
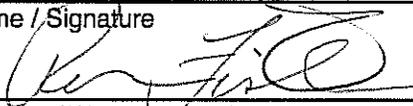
S = Satisfactory; **IF** = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

REVIEWED

	Yes	No	Not Obs/App
Administrative			
Authorization approved and signed			
Authorization current			
All users listed on authorization			
All users trained in accordance with authorization requirements			
Authorization accurately reflects work being conducted			
Authorization posted / available in work area			
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Guide

	REVIEWED		
	Yes	No	Not Obs/App
Equipment Authorization - Certification/calibration/logs			
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance	IF		
Environmental Services			
Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.			
Knowledge of safety systems			
On-the-job training			
Safety concerns, how to communicate concerns			
Comments			
SAA / RWCA / MWSAA inspected (7 / 2 / 1)			
SAAs were reviewed and specific deficiencies were discussed with the Division.			
Performed By: Chan Ho Yi		Date: 7/25/06	
Name / Signature			
Reviewed By: Ross Fisher		Date: 7/25/06	
Name / Signature IFA Team Leader			

Appendix D - Field Inspection Guide

Authorization Type: Satellite Accumulation Areas (SAA)

Date: 7/25/2006

Location(s): B084 - 118, 153, 155, 157, 163
205, 355

Authorization Number/Reference: SAA, Building, Room

S = Satisfactory; **IF** = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

	REVIEWED		
Administrative	Yes	No	Not Obs/App
Authorization approved and signed			
Authorization current			
All users listed on authorization			
All users trained in accordance with authorization requirements			
Authorization accurately reflects work being conducted			
Authorization posted / available in work area			
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix D - Field Inspection Guide

	REVIEWED		
	Yes	No	Not Obs/App
Equipment Authorization - Certification/calibration/logs			
Autoclave			
Biosafety Cabinet			
Clean Room			
Crane Hoist			
Eyewash / Safety Shower			
Fire Extinguishers			
Flammables Cabinet/Refrigerator			
Fork Lift / Heavy Equipment Operator			
Fume Hood			
Glove Box			
Hand and Shoe Counter			
Local Exhaust System			
Monitoring / Alarm System			
Photoprocessing Equipment			
Sonicator			
Ultracentrifuge			
Other			
Waste Management			
WAA compliance			
SAA compliance	S		
Environmental Services			
Air emissions			
Sanitary sewer discharge			
Storage tanks - aboveground or underground			
Storm water management			
Treatment systems			
Field Interviews			
Knowledge of authorizations, procedures, etc.			
Knowledge of safety systems			
On-the-job training			
Safety concerns, how to communicate concerns			
Comments			
SAA / RWCA / MWSAA inspected (12 / 3 / 0)			
All storage areas were compliant (100% pass rate)			
Performed By: Chan Ho Yi		Date: 7/25/06	
Name / Signature			
Reviewed By: Ross Fisher		Date: 7/25/06	
Name / Signature IFA Team Leader			

Appendix D - Field Inspection Guide

Authorization Type: Satellite Accumulation Areas (SAA)

Date: 7/17/2006

Location(s): B70A 1121A, 1121B

Authorization Number/Reference: SAA, Building, Room

S = Satisfactory; **IF** = Needs Improvement - FINDING;

IR = Needs Improvement - RECOMMENDATION

	REVIEWED		
Administrative	Yes	No	Not Obs/App
Authorization approved and signed			
Authorization current			
All users listed on authorization			
All users trained in accordance with authorization requirements			
Authorization accurately reflects work being conducted			
Authorization posted / available in work area			
Other:			
Hazardous Work Permits			
Confined Space Permit			
Energized Work Permits (EWP - A, B)			
Fire Safety Permit			
Lock Out Tag Out (LOTO)			
Permit to Penetrate Surface			
Work Area Occupational and Environmental Safety and Health			
Access and egress			
Biohazards			
Chemical Hygiene and Safety			
Chemical Management System status			
Compressed gasses			
Confined space			
Cryogenic			
Electrical			
Energy			
Ergonomic considerations			
Exit Routes, Emergency Action Plans, and Fire Prevention Plans			
Elevated locations and guarding			
Lasers			
Lead			
Machine tools			
PPE			
Pressure			
Soldering			
Thermal			
Walking and working surfaces			
Welding			
Other Hazards:			
Radiation Protection			
Radioisotope Journal up to date			
Contamination/Inventory Control: meters, material storage, waste segregation, housekeeping			
Exposure Control: shielding, dosimetry, PPE, food/drink			
Posting & Labeling: rooms, sinks, equipment			

Appendix E Findings and Observations

Appendix E Findings and Observations Summary

Item No.	Category	Description of Finding (#'d items) or Observations (lettered items)	Building	Rooms	Principal Investigator
FINDINGS					
1	Biosafety	Biohazard Labels	1	367, 368, 271, 330, 331	Jap
			70A	1121C	Blakely
			74	152, 166	Weier
			74	319A, 316B, 344, 331, 3110, 3050	Cooper
			84	155, 175	Campisi
			84	118, 155, 161, 161A, 165, 175	Kohwi
			977	231, 235, 236	Bissell
2	Biosafety	Training Courses	1	367, 368, 271, 330, 331	Jap
			55	122, 139	Budinger
			55	139, 139A	Eberling
			70A	1103; 1119; 1121A, B, C	Blakely
			73	001C, 108, 109, 110	Stampfer
			74	152, 166	Weier
			74	217, 225, 265B, 268	Krauss
			74	217, 225, 265	Conboy
			74	319A, 316B, 344, 331, 3110, 3050	Cooper
			74	344, 346, 384	Harris
			84	155, 174	Campisi
			84	217, 225, 265, 268, 2035	Chasis
			84	118, 155, 161, 161A, 165, 174	Kohwi
			977	216, 217, 212	Gray
			977	224, 225, 229, 231, 235, 236	Bissell
			977	239, 240, 242	Yaswen
3	Biosafety	BBP Sharps Evaluation	55	139	Budinger
4	Biosafety	Exposure Control Plan (ECP) Review	55	122, 139	Budinger
			73	001C, 108, 109, 110	Stampfer
5	Biosafety	Hepatitis Medical Surveillance	55	122, 139	Budinger
			73	001C, 108, 109, 110	Stampfer
			977	239, 240, 242	Yaswen
			977	216, 217, 212	Gray
6	Biosafety	Biohazardous Waste	84	175	Campisi
7	Biosafety	Lab Coat Laundry	1	367, 368, 271, 330, 331	Jap
			73	001C, 108, 109, 110	Stampfer
			74	152, 166	Weier
			74	319A, 316B, 344, 331, 3110, 3050	Cooper
			74	363, 370, 378, 385, 385A	Wyrobek
			84	118, 155, 161, 161A, 165, 175	Kohwi
			84	155, 175	Campisi
8	Biosafety	Lab and Personal Coats	74	225	Conboy
9	Biosafety	Lentiviral Vector Medical Surveillance Communication	74	225 and/or 265B	Conboy
10	Biosafety	Operaton-Specific Training,	55	139, 139A	Eberling

Appendix E Findings and Observations Summary

Item No.	Category	Description of Finding (#'d items) or Observations (lettered items)	Building	Rooms	Principal Investigator
11	Biosafety	TB Medical Surveillance	55	139, 139A	Eberling
12	Biosafety	Medical Alert Card	55	139, 139A	Eberling
13	Biosafety	Herpes B Virus Medical Procedure	55	139, 139A	Eberling
14	Biosafety	Homogenization Operation	1	330, 331	Jap
15	Biosafety	Window Fly Screens	1	330, 331	Jap
16	Biosafety	Floor Cleaning	84	161A	Kohwi
17	Biosafety	Exposure Control Plan Controls	73	001C, 108, 109, 110	Stampfer
18	Biosafety	Autoclave Log and Biological Indicator	70A	4475	Torok
19	AHD	Formal Authorization Update Required	55 56	151, 208, 214 101	Gibbs O'Neill
20	AHD	Health Hazard Gase Storage	55	208	Gibbs
21	AHD	Eyewash and Shower	55	208	Gibbs
22	AHD	Fire Door	55	208	Gibbs
23	SAA	Waste compliance	74 70A		
24	Eyewash/Shower Inspection		70A	4475	Torok
Institutional Findings					
	Eyewash/Shower Testing				
I-1			70A	1119	
I-2			74	349A	
Observations					
A	Biosafety	Vacuum Line Filter	73 74 84 977 977 977 70A 84	001C, 108, 109, 110 316B, 349A 155, 161A, 175 240, 242 211 231, 236 1121C 175	Stampfer Cooper Kohwi Yaswen Barcellos-Hoff Bissell Blakely Campisi
B	Biosafety	Chair Cushion	1 73 74 74 84 977	331 001C, 108, 109, 110 152, 266 349A 225, 265B 236	Jap Stampfer Weier Cooper Chasis Bissell

Appendix E Findings and Observations Summary

Item No.	Category	Description of Finding (#'d items) or Observations (lettered items)	Building	Rooms	Principal Investigator
C	Biosafety	Use of Burners in BSCs	1	331	Jap
			74	225	Conboy
			74	265B	Krauss
			84	175	Campisi
			84	175	Kohwi
			84	265B	Krauss
D	Biosafety	Lab Coat Hooks	84	217, 225, 265, 268, 2035	Chasis
			84	155, 175	Kohwi
E	Divisional	Job Hazards Questionnaire (JHQ)			

Appendix E-1
Findings and Observations Detail (see App. E-2 for Training Finding)

Item No.	Building & Room #s	Description of Finding (#'d items) or Observations (lettered items)	Regulation or Policy Citation	Recommendation or Corrective Action
<i>Lettered Items are Observations - a number following a letter, e.g., A.1, refers to an instance of the observation.</i>				
<i>Numbered Items are Findings - a number following a Finding number, e.g., 1.1, refers to an instance of the observation.</i>				
A.1	977-211 Barcellos-Hoff	Biosafety, Vacuum Line Filter Observation: The vacuum-flask apparatuses used at the biosafety cabinets to trap aspirated culture solutions do not have an in-line HEPA filter to protect the house vacuum system from aerosolized biological material.	Primary Containment for Biohazards: Selection, Installation and Use of Biological Safety Cabinets, 2nd Edition. US DHHS Public Health Service CDC and NIH, September 2000, Figure 12.	Recommendation: Purchase and install a HEPA filter in the vacuum line between the flask and the house-vacuum system. Example filters are Whatman, VACU-GARD, Disposable Filters (i.e., Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737).
A.2	977-231, 236 Bissell	Biosafety, Vacuum Line Filter Observation: The vacuum-flask apparatuses used at the biosafety cabinets to trap aspirated culture solutions do not have an in-line HEPA filter to protect the house vacuum system from aerosolized biological material.	Primary Containment for Biohazards: Selection, Installation and Use of Biological Safety Cabinets, 2nd Edition. US DHHS Public Health Service CDC and NIH, September 2000, Figure 12.	Recommendation: Purchase and install a HEPA filter in the vacuum line between the flask and the house-vacuum system. Example filters are Whatman, VACU-GARD, Disposable Filters (i.e., Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737).
B.1	977-236 Bissell	Biosafety, Chair Cushion Observation: The BL2 tissue culture Room 236 has a chair with a cloth-covered seat cushion that cannot be disinfected.	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require BL2 labs to be designed so that they can be easily cleaned, but there is not an explicit requirement for cleanable seat cushions in BL2 containment. NIH/CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL) states that chairs and other furniture used in laboratory work should be covered with a non-fabric material that can be easily decontaminated.	Recommendation: The chair in Room 236 should be replaced with a chair that has cleanable vinyl cushions.
1.1	977-231, 235, 236 Bissell	Biosafety, Biohazard Labels Finding: Biohazard labels are not posted on equipment used to store or grow Risk Group 2 materials. Labels were provided by EH&S during the appraisal.	LBNL Biosafety Manual Section VIII (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require that biohazard labels be posted on all equipment used to store and grow Risk Group 2 biological materials.	Corrective Action: Post biohazard labels on equipment used to store or grow Risk Group 2 materials. Ask EH&S for more labels if needed.
A.3	70A-1121C Blakely	Biosafety, Vacuum Line Filter Observation: The vacuum-flask apparatuses used at the biosafety cabinets to trap aspirated culture solutions do not have an in-line HEPA filter to protect the house vacuum system from aerosolized biological material.	Primary Containment for Biohazards: Selection, Installation and Use of Biological Safety Cabinets, 2nd Edition. US DHHS Public Health Service CDC and NIH, September 2000, Figure 12.	Recommendation: Purchase and install a HEPA filter in the vacuum line between the flask and the house-vacuum system. Example filters are Whatman, VACU-GARD, Disposable Filters (i.e., Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737).
Inst 1	70A-1119 Blakely	Biosafety and Chemical Safety, Eyewash/Shower Testing Finding: The inspection tag on the emergency eyewash and shower unit (E/S) in Room 1119 indicates the E/S unit is not being flow-tested by Facilities.	PUB-3000 (Chapter 4, Section 4.8.1) and PUB-5341, Chemical Hygiene and Safety Plan (Emergency Procedures and Equipment section) requires that E/S units must be flushed at least quarterly by Facilities personnel, and inspection tags must be filled out to document this activity.	Corrective Action: Contact the Facilities Work Request Center and request that the E/S be tested and included on the quarterly E/S inspections.

Appendix E-1
Findings and Observations Detail (see App. E-2 for Training Finding)

Item No.	Building & Room #s	Description of Finding (#'d items) or Observations (lettered items)	Regulation or Policy Citation	Recommendation or Corrective Action
<i>Lettered Items are Observations - a number following a letter, e.g., A.1, refers to an instance of the observation.</i>				
<i>Numbered Items are Findings - a number following a Finding number, e.g., 1.1, refers to an instance of the observation.</i>				
1.2	70A-1121C Blakely	Biosafety, Biohazard Labels Finding: Biohazard labels are not posted on equipment used to store or grow Risk Group 2 materials.	LBNL Biosafety Manual Section VIII (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require that biohazard labels be posted on all equipment used to store and grow Risk Group 2 biological materials.	Corrective Action: Post biohazard labels on equipment used to store or grow Risk Group 2 materials. Ask EH&S for labels as needed.
3	55-139 Budinger	Biosafety, BBP Sharps Evaluation Finding: As described in the DFI Bloodborne Pathogen (BBP) Exposure Control Plan (ECP), DFI is using sharps devices (e.g., butterfly needles) that do not include engineering sharps protection. An annual re-evaluation of such devices has not been documented by the user group.	OSHA Bloodborne Pathogens Standard 1910.1030(c)(1)(iv)&(v) requires: a) an annual documented re-evaluation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure, and b) participation in the re-evaluation of non-managerial employees who are potentially exposed to the contaminated sharps. Also see LBNL Biosafety Manual (Exposure Control Plan) and PUB-3000 (Chapter 4, Section 4.7)	Corrective Action: Conduct and document (e.g., via email) a re-evaluation of the sharps being used and appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure. Ensure participation in the re-evaluation of non-managerial employees who are potentially exposed to the contaminated sharps.
4.1	55-122, 139 Budinger	Biosafety, Exposure Control Plan (ECP) Review Finding: The ECP is not reviewed, updated as needed, and signed by the PI every year.	OSHA Bloodborne Pathogens Standard 1910.1030(c)(1)(iv) requires that the ECP be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure. The review and update of such plans shall also: a) Reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens; and b) Document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure. Also see LBNL Biosafety Manual (Exposure Control Plan) and PUB-3000 (Chapter 4, Section 4.7).	Corrective Action: The PI listed on the ECP must review, update as required, and sign the ECP annually.
5.1	55-122, 139 Budinger	Biosafety, Hepatitis B Medical Surveillance Finding: Not all employees listed in the ECP have completed their hepatitis B (Hep B) medical surveillance requirement. Following the appraisal, one employee needed to complete the Hep B vaccination series.	OSHA Bloodborne Pathogens Standard 1910.1030(f)(2) requires that the Hep B vaccination be made available after the employee has received the BBP training and within 10 working days of initial assignment unless the employee declines the vaccination by signing a required statement. These requirements are covered in this group's ECP and the ECP section of the LBNL Biosafety Manual. Each employee must complete an Information and Consent for Hepatitis B Vaccination form (including employees who decline vaccination).	Corrective Action: Ensure one employee completes their hepatitis B medical surveillance requirement.

Appendix E-1
Findings and Observations Detail (see App. E-2 for Training Finding)

Item No.	Building & Room #s	Description of Finding (#'d items) or Observations (lettered items)	Regulation or Policy Citation	Recommendation or Corrective Action
<i>Lettered Items are Observations - a number following a letter, e.g., A.1, refers to an instance of the observation.</i>				
<i>Numbered Items are Findings - a number following a Finding number, e.g., 1.1, refers to an instance of the observation.</i>				
6	84-175 Campisi	Biosafety, Biohazardous Waste Finding: Plastic pipettes are used in the biosafety cabinet to aspirate materials. After use, the pipettes are placed in a cardboard box on the floor under the biosafety cabinet.	LBNL Medical Waste disposal guidelines (Section 2.1, Biohazardous Waste Labels, Bags, and Containers) require medical/biohazardous waste generated at LBNL to be disposed of in biohazardous waste bags. OR LBNL Medical Waste disposal guidelines (Section 2.1, Biohazardous Waste Labels, Bags, and Containers) require medical/biohazardous waste generated at LBNL to be disposed of in biohazardous waste bags. Biohazardous waste bags must be placed in labeled biohazardous waste containers. The biohazardous waste containers must be rigid and leakproof, with a tight-fitting lid. The containers may be any color, but they must be labeled with either the words "Biohazardous Waste," or with a biohazard symbol and the word "Biohazard." The labels must be placed on both the lid and the sides of the container.	Corrective Action: Biologically contaminated pipettes must be placed in a rigid and leak-proof biohazardous waste container that is lined with a biohazard bag and has a tight-fitting lid. The container must have biohazard labels on the top and all sides. There are boxes used for the disposal of broken glassware that are lined and have lids to which labels may be affixed and bags may be inserted.
C.1	85-175 Campisi	Biosafety Cabinets & Burner Fires Observation: Two standard bunsen burners are in use in the biosafety cabinets (BSCs) in Room 175 (i.e., BSC SG11462V and SG21357V). One Touch-O-Matic burner is in use in BSC SG133271). The standard bunsen burners may present a fire hazard.	Publicly available literature from BSC manufacturers (e.g., Baker), safety organizations (e.g., AIHA), DOE (i.e., Lessons Learned), and campuses document and state: a) there are fires in BSCs due to bunsen burners, b) flames in BSCs are not recommended, c) flames are not needed when good BSC and aseptic techniques are used, and d) flames should only be used after evaluation of the circumstances and only burners with pilot lights should be used.	Recommendation: Researchers should seriously evaluate sterility practices and needs and determine if sterilization by flame is required. If needed, all standard bunsen burners should be replaced with burners with pilot lights (e.g., Touch-O-Matic Bunsen Burner) or electric incinerators (e.g., Bacti-Cinerator).
1.3	84-155, 175 Campisi	Biosafety, Biohazard Labels Finding: Biohazard labels are not posted on equipment used to store or grow Risk Group 2 materials.	LBNL Biosafety Manual Section VIII (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require that biohazard labels be posted on all equipment used to store and grow Risk Group 2 biological materials.	Corrective Action: Post biohazard labels on equipment used to store or grow Risk Group 2 materials. Ask EH&S for more labels if needed.
A.4	84-175 Campisi	Biosafety, Vacuum Line Filter Observation: One vacuum-flask apparatus used at the biosafety cabinet to trap aspirated culture solutions does not have an in-line HEPA filter to protect the house vacuum system from aerosolized biological material.	Primary Containment for Biohazards: Selection, Installation and Use of Biological Safety Cabinets, 2nd Edition. US DHHS Public Health Service CDC and NIH, September 2000, Figure 12.	Recommendation: Purchase and install a HEPA filter in the vacuum line between the flask and the house-vacuum system. Example filters are Whatman, VACU-GARD, Disposable Filters (i.e., Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737).

Appendix E-1
Findings and Observations Detail (see App. E-2 for Training Finding)

Item No.	Building & Room #s	Description of Finding (#'d items) or Observations (lettered items)	Regulation or Policy Citation	Recommendation or Corrective Action
<i>Lettered Items are Observations - a number following a letter, e.g., A.1, refers to an instance of the observation.</i>				
<i>Numbered Items are Findings - a number following a Finding number, e.g., 1.1, refers to an instance of the observation.</i>				
7.1	84-155, 175 Campisi	Biosafety, Lab Coat Laundry Finding: Cloth lab coats are worn. There is no lab coat laundry service. Work requiring Biosafety Level 2 containment is conducted.	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7). LBNL requirements are based on NIH and CDC BL2 criteria. Requirement: All protective clothing is either disposed of in the laboratory or laundered by the institution; it should never be taken home by personnel.	Corrective action: Establish a lab coat laundry service through LBNL procurement and ensure personnel launder their coats.
B.2	84-225, 265B Chasis	Biosafety, Chair Cushion Observation: The chairs at the biosafety cabinets in Rooms 225 and 265B have chairs with cloth-covered seat cushions that cannot be disinfected.	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require BL2 labs to be designed so that they can be easily cleaned, but there is not an explicit requirement for cleanable seat cushions in BL2 containment. NIH/CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL) states that chairs and other furniture used in laboratory work should be covered with a non-fabric material that can be easily decontaminated.	Recommendation: The chairs in Rooms 225 and 265B where BL2 work is conducted should be replaced with chairs that have cleanable vinyl cushions.
D.1	84-217, 225, 265, 268, 2035 Chasis	Biosafety, Lab Coat Hooks Observation: When not in use, some the cloth lab coats are placed on the backs of lab chairs.	LBNL Biosafety Manual (Containment Level 1) and PUB-3000 (Chapter 4, Section 4.7). LBNL requirements are based on NIH and CDC BL1 criteria. These standards state that at Biosafety Level 1 separate hanging areas should be provided for street clothing and laboratory coats.	Recommendation: Provide separate hooks on which to hang lab coats so that potential biological materials on the lab coat do not contact items that should not be contaminated (e.g., seat cushions, personal clothes, other lab coats).
8.0	74-225 Conboy	Biosafety, Lab & Personal Coats Finding: Personal coats are hung on the same coat rack as lab coats. This is a Biosafety Level 2 containment lab.	LBNL Biosafety Manual (Containment Level 1, Laboratory Procedures and Practices) and PUB-3000 (Chapter 4, Section 4.7) require separate hanging areas for street clothing and laboratory coats.	Corrective Action: Provide separate locations to hang personal and lab coats. Individual lab coats should ideally be hung on separate hooks.
C.2	74-225 Conboy	Biosafety Cabinets & Burner Fires Observation: A bunsen burner is in use in the biosafety cabinet (BSC) in Room 225. This BSC has a standard bunsen burner that may present a fire hazard.	Publicly available literature from BSC manufacturers (e.g., Baker), safety organizations (e.g., AIHA), DOE (i.e., Lessons Learned), and campuses document and state: a) there are fires in BSCs due to bunsen burners, b) flames in BSCs are not recommended, c) flames are not needed when good BSC and aseptic techniques are used, and d) flames should only be used after evaluation of the circumstances and only burners with pilot lights should be used.	Recommendation: Researchers should seriously evaluate sterility practices and needs and determine if sterilization by flame is required. If needed, all standard bunsen burners should be replaced with burners with pilot lights (e.g., Touch-O-Matic Bunsen Burner) or electric incinerators (e.g., Bacti-Cinerator).

Appendix E-1
Findings and Observations Detail (see App. E-2 for Training Finding)

Item No.	Building & Room #s	Description of Finding (#'d items) or Observations (lettered items)	Regulation or Policy Citation	Recommendation or Corrective Action
<i>Lettered Items are Observations - a number following a letter, e.g., A.1, refers to an instance of the observation.</i>				
<i>Numbered Items are Findings - a number following a Finding number, e.g., 1.1, refers to an instance of the observation.</i>				
9	74-225 and/or 265B Conboy	Biosafety, Lentiviral Vector Medical Surveillance Communication Finding: Third-generation lentiviral vectors are used in the same biosafety cabinet(s) that are used by the Chasis group. Medical surveillance requirements related to this agent's use have not been communicated to the Chasis group.	Biological Use Authorization B100-061606, Section 11, Medical Surveillance requires that persons working with the third-generation HIV lentiviral vectors, and other lab personnel who do not work directly with the lentiviral vectors but who share use of the same biosafety cabinet be informed of the medical surveillance requirements stated in the BUA.	Corrective Action: Provide hazard communication and medical surveillance requirements to the Chasis group regarding use of third-generation lentiviral vectors in commonly used biosafety cabinet(s).
Inst 2	74-349A Cooper	Biosafety, Eyewash Testing finding: There was no inspection tag on the emergency eyewash in 74-349A. Therefore, there is no indication that the eyewash is being tested quarterly by Facilities.	LBNL Chemical Hygiene and Safety Plan (PUB-5341) in section: Hazard Controls, Emergency Procedures and Equipment, Emergency Eyewashes and Safety Showers. Emergency eyewash units must be flushed at least quarterly by Facilities as documented on an inspection tag. Also, LBNL Biosafety Manual (Containment Level 2) requires an eyewash.	Corrective action: Request that Facilities test the eyewash quarterly as indicated by an inspection tag. Requests may be made via the Facilities Work Request Center.
B.3	74-349A Cooper	Biosafety, Chair Cushion Observation: Chair cushions at biosafety cabinets in Biosafety Level 2 Room 349A and 316B cannot be disinfected (i.e., three chairs with cloth-covered seat cushions and one chair with a cracked-vinyl cushion).	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require BL2 labs to be designed so that they can be easily cleaned, but there is not an explicit requirement for cleanable seat cushions in BL2 containment. NIH/CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL) states that chairs and other furniture used in laboratory work should be covered with a non-fabric material that can be easily decontaminated.	Recommendation: The chairs in Room 74-349A where BL2 work is conducted should be replaced with chairs that have cleanable vinyl cushions.
A.5	74-316B, 349A Cooper	Biosafety, Vacuum Line Filter Observation: Three vacuum-flask apparatuses used at biosafety cabinets to trap aspirated culture solutions in 316B and 349A do not have in-line HEPA filters to protect the house vacuum system from aerosolized biological material.	Primary Containment for Biohazards: Selection, Installation and Use of Biological Safety Cabinets, 2nd Edition. US DHHS Public Health Service CDC and NIH, September 2000, Figure 12.	Recommendation: Purchase and install a HEPA filter in the vacuum line between the flask and the house-vacuum system. Example filters are Whatman, VACU-GARD, Disposable Filters (i.e., Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737).
1.4	74-319A, 316B, 344, 331, 3110, 3050 Cooper	Biosafety, Biohazard Labels Finding: Biohazard labels are not posted on equipment used to store or grow Risk Group 2 materials.	LBNL Biosafety Manual Section VIII (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require that biohazard labels be posted on all equipment used to store and grow Risk Group 2 biological materials.	Corrective Action: Post biohazard labels on equipment used to store or grow Risk Group 2 materials. Ask EH&S for more labels if needed.
7.2	74-319A, 316B, 344, 331, 3110, 3050 Cooper	Biosafety, Lab Coat Laundry Finding: Cloth lab coats are worn for Biosafety Level 1 and 2 work. Disposable lab coats are worn for lentiviral vector work. There is no lab coat laundry service for cloth lab coats.	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7). LBNL requirements are based on NIH and CDC BL2 criteria. Requirement: All protective clothing is either disposed of in the laboratory or laundered by the institution; it should never be taken home by personnel.	Corrective action: Establish a lab coat laundry service through LBNL procurement and ensure personnel launder their coats.

Appendix E-1
Findings and Observations Detail (see App. E-2 for Training Finding)

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<i>Numbered Items are Findings - a number following a Finding number, e.g., 1.1, refers to an instance of the observation.</i>				
10	55-139, 139A Eberling	Biosafety, Operaton-Specific Training, Finding: Operation-specific training has been conducted for Eberling and Brennan. Documentation of this training may be needed. Operation-specific training required in the BUA was not completed and documented for one newer person who is conducting work (i.e., Baker).	Biological Use Authorization (BUA) B129-040506, Attachment A, Controls, Training and Qualifications. In addition to completion of EH&S Courses, each person is required to compete training on Herpes B virus from LBNL EH&S or UCSF, read the BUA, and and complete job-specific training provided by the PI.	Corrective Action: Ensure that the operation-specific training required in the BUA is completed and documented for each person conducting work.
11	55-139, 139A Eberling	Biosafety, TB Medical Surveillance Finding: One of the three persons conducting work with potential exposure to primates or their fluids (i.e., Eberling, Brennan, Baker) has documentation of an annual TB test on record in LBNL Health Services. One person reportedly gets their TB test at UCSF.	Biological Use Authorization (BUA) B129-040506, Section 11- Medical Surveillance states that "All personnel must have an annual TB test for protection of the worker and the primate. LBNL Health Services will provide TB testing." This requirement assumes that there must be a record of the TB tests in LBNL Health Services.	Corrective Action: Ensure that each person conducting work with potential exposure to primates or their fluids has documentation of an annual TB test on record in LBNL Health Services.
12	55-139, 139A Eberling	Biosafety, Medical Alert Card Finding: There was no "Medical Alert Information" card attached to the first aid kit in the PET room.	Biological Use Authorization (BUA) B129-040506, Attachment C, requires potentially exposed personnel to bring the UCSF "Medical Alert Information" card that is attached to the First Aid kit in the PET Room 139 to the treating physician to provide medical information regarding Herpes B simiae virus.	Corrective Action: Attach the UCSF "Medical Alert Information" card for Herpes B simiae virus to the first aid kit in the PET Room 139.
13	55-139, 139A Eberling	Biosafety, Herpes B Virus Medical Procedure. Finding: The UCSF draft Herpes B viurs medical protocol was posted in Room 139. Observation: The LBNL Biological Use Authorization and its medical procedure for Herpes B virus exposure was not available in Room 139.	Biological Use Authorization (BUA) B129-040506, Attachment C - Medical Procedure for Prevention of Herpes B virus in Monkey Handlers, requires LBNL personnel to follow specific procedures in the event of an exposure during business and non-business hours. UCSF procedures are not necessarily applicable to LBNL workers.	Corrective Action: Remove the posting of the UCSF Herpes B virus medical protocol. Recommendation: Post or make available the LBNL BUA or medical protocol in Room 139. Put a copy of the medical protocol in the first aid kit.
5.2	977-216, 217, 212 Gray	Biosafety, Hepatitis B Medical Surveillance finding: Page 2 of the Exposure Control Plan (ECP) states that all personnel listed in the Biological Use Authorization (BUA) may have exposure to bloodborne pathogen materials and these people require Hepatitis B (Hep B) medical surveillance. Not all employees listed in the BUA have completed their Hep B medical surveillance requirement. In addition, the BUA and ECP are not consistent relative to who is "potentially exposed."	Section 4 of the Biological Use Authorization (BUA B122-0021406) and Section II of the ECP inconsistently define people who: a) do not directly handle BBP materials, b) might possibly be exposed, and c) need to be offered the Hep B vaccination. Footnote 3 in the BUA (page 2) lists four people that meet this criteria, while the ECP states that all people listed in the BUA (about 10 people) meet this criteria.	Corrective Action: Review and update the BUA and/or ECP to consistently define the target group of personnel that may be exposed and who must be included in the Hep B medical surveillance program. If all people listed in the BUA are targeted, ensure that all people participate in the Hep B medical surveillance program.

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<i>Numbered Items are Findings - a number following a Finding number, e.g., 1.1, refers to an instance of the observation.</i>				
B.4	1-331 Jap	Biosafety, Chair Cushion Observation: The chair at the BL2 biosafety cabinet in Room 331 has a cloth-covered seat cushion that cannot be disinfected.	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require BL2 labs to be designed so that they can be easily cleaned, but there is not an explicit requirement for cleanable seat cushions in BL2 containment. NIH/CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL) states that chairs and other furniture used in laboratory work should be covered with a non-fabric material that can be easily decontaminated.	Recommendation: The chair in Room 331 should be replaced with a chair that has cleanable vinyl cushions.
1.5	1-367, 368, 271, 330, 331 Jap	Biosafety, Biohazard Labels Finding: Biohazard labels are not posted on equipment used to store or grow Risk Group 2 materials.	LBNL Biosafety Manual Section VIII (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require that biohazard labels be posted on all equipment used to store and grow Risk Group 2 biological materials.	Corrective Action: Post biohazard labels on equipment used to store or grow Risk Group 2 materials. Ask EH&S for more labels if needed.
7.3	1-367, 368, 271, 330, 331 Jap	Biosafety, Lab Coat Laundry Finding: There is no lab coat laundry service for cloth lab coats. Biosafety Level 1 and 2 work is being conducted.	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7). LBNL requirements are based on NIH and CDC BL2 criteria. Requirement: All protective clothing is either disposed of in the laboratory or laundered by the institution; it should never be taken home by personnel.	Corrective action: Establish a lab coat laundry service through LBNL procurement and ensure personnel launder their coats.
14	1-330, 331Jap	Biosafety, Homogenization Operation Finding: Higher concentrations of HeLa cells are homogenized in the lab hood in Room 330. The biosafety cabinet in 331 is reportedly not used because there was concern that the biosafety cabinet HEPA filters may not contain the viruses that normally may be present in the HeLa stock.	Biological Use Authorization (BUA) B077-061506, LBNL Biosafety Manual (Containment Level 2), and PUB-3000 (Chapter 4, Section 4.7). LBNL requirements are based on NIH and CDC BL2 criteria. BUA B077 requires all procedures that may produce aerosols (including homogenization) from work with RG2 cells to be conducted in a biosafety cabinet. In addition, the Biosafety Manual requires that biosafety cabinets be used whenever: a) Procedures with a potential for creating aerosols or splashes are conducted (e.g., centrifugation, shaking, blending, sonication or opening containers in the presence of pressure differentials), or b) High concentration or large volumes of infectious agents are used. Also note: CDC/NIH, 2nd Edition, Primary Containment for Biohazards: Selection, Installation, and Use of Biological Safety Cabinets, Section 2.	Corrective Action: Move the HeLa cell work (e.g., homogenization) from the lab hood in Room 330 to the biosafety cabinet in Room 331.

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<i>Numbered Items are Findings - a number following a Finding number, e.g., 1.1, refers to an instance of the observation.</i>				
C.3	1-331 Jap	Biosafety Cabinets & Burner Fires Observation: A bunsen burner is in use in the biosafety cabinet (BSC) in Room 331. This BSC has a standard bunsen burner that may present a fire hazard.	Publicly available literature from BSC manufacturers (e.g., Baker), safety organizations (e.g., AIHA), DOE (i.e., Lessons Learned), and campuses document and state: a) there are fires in BSCs due to bunsen burners, b) flames in BSCs are not recommended, c) flames are not needed when good BSC and aseptic techniques are used, and d) flames should only be used after evaluation of the circumstances and only burners with pilot lights should be used.	Recommendation: Researchers should seriously evaluate sterility practices and needs and determine if sterilization by flame is required. If needed, all standard bunsen burners should be replaced with burners with pilot lights (e.g., Touch-O-Matic Bunsen Burner) or electric incinerators (e.g., Bacti-Cinerator).
15	1-330, 331 Jap	Biosafety, Window Fly Screens Finding: There are no fly screens on the windows that open to the outside, and the windows are sometimes opened.	LBNL Biosafety Manual (Containment Level 1) and PUB-3000 (Chapter 4, Section 4.7). LBNL requirements are based on NIH and CDC BL2 criteria. If a BL1 or BL2 lab has windows that open, the windows must be fitted with fly screens.	Corrective Action: Install fly screens on windows that open.
7.4	84-118, 155, 161, 161A, 165, 175 Kohwi	Biosafety, Lab Coat Laundry Finding: There is no lab coat laundry service for cloth lab coats. Biosafety Level 1 and 2 work is being conducted.	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7). LBNL requirements are based on NIH and CDC BL2 criteria. Requirement: All protective clothing is either disposed of in the laboratory or laundered by the institution; it should never be taken home by personnel.	Corrective action: Establish a lab coat laundry service through LBNL procurement and ensure personnel launder their coats.
C.4	84-175 Kohwi	Biosafety Cabinets & Burner Fires Observation: A bunsen burner is in use in the biosafety cabinet (Nuair BSC 12232RT) in Room 175. This BSC has a standard bunsen burner that may present a fire hazard.	Publicly available literature from BSC manufacturers (e.g., Baker), safety organizations (e.g., AIHA), DOE (i.e., Lessons Learned), and campuses document and state: a) there are fires in BSCs due to bunsen burners, b) flames in BSCs are not recommended, c) flames are not needed when good BSC and aseptic techniques are used, and d) flames should only be used after evaluation of the circumstances and only burners with pilot lights should be used.	Recommendation: Researchers should seriously evaluate sterility practices and needs and determine if sterilization by flame is required. If needed, all standard bunsen burners should be replaced with burners with pilot lights (e.g., Touch-O-Matic Bunsen Burner) or electric incinerators (e.g., Bacti-Cinerator).
D.2	84-155, 175 Kohwi	Biosafety, Lab Coat Hanging Observation: Cloth lab coats are piled on top of each other on a hanger-rack in the hallway.	LBNL Biosafety Manual (Containment Level 1) and PUB-3000 (Chapter 4, Section 4.7). LBNL requirements are based on NIH and CDC BL1 criteria. These standards state that lab coats must be worn, but the method for storing lab coats is not specified.	Recommendation: Provide separate hooks on which to hang lab coats so that potential biological materials on the lab coat do not contact other lab coats.
A.6	84-155, 161A, 175 Kohwi	Biosafety, Vacuum Line Filter Observation: Vacuum-flask apparatuses used at biosafety cabinets to trap aspirated culture solutions do not have in-line HEPA filters to protect the house vacuum system from aerosolized biological material.	Primary Containment for Biohazards: Selection, Installation and Use of Biological Safety Cabinets, 2nd Edition. US DHHS Public Health Service CDC and NIH, September 2000, Figure 12.	Recommendation: Purchase and install a HEPA filter in the vacuum line between the flask and the house-vacuum system. Example filters are Whatman, VACU-GARD, Disposable Filters (i.e., Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737).

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16	84-161A Kohwi	Biosafety, Floor Cleaning Finding: The floor in Room 161A appears to be dirty and is not being cleaned by Facilities. This room has a biosafety cabinet and is a BL2 containment area.	LBNL Biosafety Manual (Containment Level 1 and 2) and PUB-3000 (Chapter 4, Section 4.7). BL1 and BL2 require cleanable surfaces that are decontaminated.	Corrective Action: Implement routine cleaning (e.g., Facilities) of the floor in Room 161A.
1.6	84-118, 155, 161, 161A, 165, 175 Kohwi	Biosafety, Biohazard Labels Finding: Biohazard labels are not posted on equipment used to store or grow Risk Group 2 materials.	LBNL Biosafety Manual Section VIII (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require that biohazard labels be posted on all equipment used to store and grow Risk Group 2 biological materials.	Corrective Action: Post biohazard labels on equipment used to store or grow Risk Group 2 materials. Ask EH&S for more labels if needed.
C.5	84-265B Krauss	Biosafety Cabinets & Burner Fires Observation: A bunsen burner is in use in the biosafety cabinet (BSC) in Room 265B. This BSC has a standard bunsen burner that may present a fire hazard.	Publicly available literature from BSC manufacturers (e.g., Baker), safety organizations (e.g., AIHA), DOE (i.e., Lessons Learned), and campuses document and state: a) there are fires in BSCs due to bunsen burners, b) flames in BSCs are not recommended, c) flames are not needed when good BSC and aseptic techniques are used, and d) flames should only be used after evaluation of the circumstances and only burners with pilot lights should be used.	Recommendation: Researchers should seriously evaluate sterility practices and needs and determine if sterilization by flame is required. If needed, all standard bunsen burners should be replaced with burners with pilot lights (e.g., Touch-O-Matic Bunsen Burner) or electric incinerators (e.g., Bacti-Cinerator).
C.6	74-265B Krauss	Biosafety Cabinets & Burner Fires Observation: A bunsen burner is in use in the biosafety cabinet (BSC) in Room 265B. This BSC has a standard bunsen burner that may present a fire hazard.	Publicly available literature from BSC manufacturers (e.g., Baker), safety organizations (e.g., AIHA), DOE (i.e., Lessons Learned), and campuses document and state: a) there are fires in BSCs due to bunsen burners, b) flames in BSCs are not recommended, c) flames are not needed when good BSC and aseptic techniques are used, and d) flames should only be used after evaluation of the circumstances and only burners with pilot lights should be used.	Recommendation: Researchers should seriously evaluate sterility practices and needs and determine if sterilization by flame is required. If needed, all standard bunsen burners should be replaced with burners with pilot lights (e.g., Touch-O-Matic Bunsen Burner) or electric incinerators (e.g., Bacti-Cinerator).
7.5	74-363, 370, 378, 385, 385A Marchetti & Wyrobek	Biosafety, Lab Coat Laundry Finding: There is no lab coat laundry service for cloth lab coats. Biosafety Level 1 and 2 work is being conducted.	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7). LBNL requirements are based on NIH and CDC BL2 criteria. Requirement: All protective clothing is either disposed of in the laboratory or laundered by the institution; it should never be taken home by personnel.	Corrective action: Establish a lab coat laundry service through LBNL procurement and ensure personnel launder their coats.

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4.2	73-001C, 108, 109, 110 Stampfer	Biosafety, Exposure Control Plan (ECP) Review finding: The ECP was not reviewed and signed by the PI and one or two employees.	OSHA Bloodborne Pathogens Standard 1910.1030(c)(1)(iv) requires that the ECP be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure. The review and update of such plans shall also: a) Reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens; and b) Document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure. Employees are also required to know the elements covered in the ECP. Also see LBNL Biosafety Manual (Exposure Control Plan) and PUB-3000 (Chapter 4, Section 4.7).	Corrective Action: The PI and employees listed on the ECP must review and sign the ECP.
17	73-001C, 108, 109, 110 Stampfer	Biosafety, Exposure Control Plan Controls. Finding: Two sections of the ECP do not reflect how the work is being conducted: a) Section II, Exposure Determination - Job Classifications. There are no "GROUP 2" employees who do not handle bloodborne pathogen materials but may be exposed. b) Section IV Methods of Compliance, B Engineering Controls. No safety needles are used with bloodborne pathogen materials.	OSHA Bloodborne Pathogens Standard 1910.1030, LBNL Biosafety Manual (Exposure Control Plan), and PUB-3000 (Chapter 4, Section 4.7).	Change the following sections of the ECP: a) Section II, Exposure Determination - Job Classifications. Uncheck "GROUP 2" since only GROUP 1 applies. b) Section IV, Methods of Compliance, B Engineering Controls. Uncheck "we use safety needles" since no safety needles are used with bloodborne pathogen materials.
B.5	73-001C, 108, 109, 110 Stampfer	Biosafety, Chair Cushion Observation: There are two vinyl chairs and one cloth chair at the biosafety cabinets in Room 109. Cloth-covered seat cushions cannot be disinfected.	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require BL2 labs to be designed so that they can be easily cleaned, but there is not an explicit requirement for cleanable seat cushions in BL2 containment. NIH/CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL) states that chairs and other furniture used in laboratory work should be covered with a non-fabric material that can be easily decontaminated.	Recommendation: The chair with cloth cushions in Room 109 where BL2 work is conducted should be replaced with a chair that has cleanable vinyl cushions.
7.6	73-001C, 108, 109, 110 Stampfer	Biosafety, Lab Coat Laundry Finding: There is no lab coat laundry service for cloth lab coats. Biosafety Level 1 and 2 work is being conducted.	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7). LBNL requirements are based on NIH and CDC BL2 criteria. Requirement: All protective clothing is either disposed of in the laboratory or laundered by the institution; it should never be taken home by personnel.	Corrective action: Establish a lab coat laundry service through LBNL procurement and ensure personnel launder their coats.

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A.7	73-001C, 108, 109, 110 Stampfer	Biosafety, Vacuum Line Filter Observation: Vacuum-flask apparatuses used at biosafety cabinets to trap aspirated culture solutions in Room 109 do not have in-line HEPA filters to protect the house vacuum system from aerosolized biological material.	Primary Containment for Biohazards: Selection, Installation and Use of Biological Safety Cabinets, 2nd Edition. US DHHS Public Health Service CDC and NIH, September 2000, Figure 12.	Recommendation: Purchase and install a HEPA filter in the vacuum line between the flask and the house-vacuum system. Example filters are Whatman, VACU-GARD, Disposable Filters (i.e., Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737).
5.3	73-001C, 108, 109, 110 Stampfer	Biosafety, Hepatitis B Medical Surveillance finding: Not all employees listed in the ECP have completed their hepatitis B (Hep B) medical surveillance requirement (e.g., two employees).	OSHA Bloodborne Pathogens Standard 1910.1030(f)(2) requires that the Hep B vaccination be made available after the employee has received the BBP training and within 10 working days of initial assignment unless the employee declines the vaccination by signing a required statement. These requirements are covered in this group's ECP and the ECP section of the LBNL Biosafety Manual. Each employee must complete an Information and Consent for Hepatitis B Vaccination form (including employees who decline vaccination).	Corrective Action: Ensure each employee completes their hepatitis B medical surveillance requirement.
18	70A-4475 Torok	Biosafety, Autoclave Log and Biological Indicator Finding: Current autoclave logs were not available to show that biological indicators had been used to test the autoclave's efficiency (i.e., sterilization).	LBNL Biosafety Manual (Sterilization) and PUB-3000 (Chapter 4, Section 4.7) require autoclaves to be certified for operating efficiency by the periodic use of biological indicator controls and records maintained for three years.	Corrective action: Autoclave logs are required that show biological indicator test dates, times, and test result information.
7.7	74-152, 166 Weier	Biosafety, Lab Coat Laundry Finding: There is no lab coat laundry service for cloth lab coats. Biosafety Level 1 and 2 work is being conducted.	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7). LBNL requirements are based on NIH and CDC BL2 criteria. Requirement: All protective clothing is either disposed of in the laboratory or laundered by the institution; it should never be taken home by personnel.	Corrective action: Establish a lab coat laundry service through LBNL procurement and ensure personnel launder their coats.
B.6	74-152, 166 Weier	Biosafety, Chair Cushion Observation: The chair at the biosafety cabinet in Room 166 has cloth seat cushions. Cloth-covered seat cushions cannot be disinfected.	LBNL Biosafety Manual (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require BL2 labs to be designed so that they can be easily cleaned, but there is not an explicit requirement for cleanable seat cushions in BL2 containment. NIH/CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL) states that chairs and other furniture used in laboratory work should be covered with a non-fabric material that can be easily decontaminated.	Recommendation: The chair with cloth cushions in Room 166 where BL2 work is conducted should be replaced with a chair that has cleanable vinyl cushions.

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1.7	74-152, 166 Weier	Biosafety, Biohazard Labels Finding: Biohazard labels are not posted on equipment used to store or grow Risk Group 2 materials.	LBNL Biosafety Manual Section VIII (Containment Level 2) and PUB-3000 (Chapter 4, Section 4.7) require that biohazard labels be posted on all equipment used to store and grow Risk Group 2 biological materials.	Corrective Action: Post biohazard labels on equipment used to store or grow Risk Group 2 materials. Ask EH&S for more labels if needed.
A.8	977-240, 242 Yaswen	Biosafety, Vacuum Line Filter Observation: Vacuum-flask apparatuses used at biosafety cabinets to trap aspirated culture solutions in Rooms 240 and 242 do not have in-line HEPA filters to protect the house vacuum system from aerosolized biological material.	Primary Containment for Biohazards: Selection, Installation and Use of Biological Safety Cabinets, 2nd Edition. US DHHS Public Health Service CDC and NIH, September 2000, Figure 12.	Recommendation: Purchase and install a HEPA filter in the vacuum line between the flask and the house-vacuum system. Example filters are Whatman, VACU-GARD, Disposable Filters (i.e., Fisher 09-744-75 or 09-744-76, VWR 28137-858 or 28137-737).
5.4	977-239, 240, 242 Yaswen	Biosafety, Hepatitis B Medical Surveillance finding: Not all employees listed in the ECP have completed their hepatitis B (Hep B) medical surveillance requirement (e.g., two employees).	OSHA Bloodborne Pathogens Standard 1910.1030(f)(2) requires that the Hep B vaccination be made available after the employee has received the BBP training and within 10 working days of initial assignment unless the employee declines the vaccination by signing a required statement. These requirements are covered in this group's ECP and the ECP section of the LBNL Biosafety Manual. Each employee must complete an Information and Consent for Hepatitis B Vaccination form (including employees who decline vaccination).	Corrective Action: Ensure each employee completes their hepatitis B medical surveillance requirement.
19	55-151, 208, 214 and 56 Gibbs	Activity Hazard Document (AHD), Updates Finding: AHD BE1016, 209, 210, and 211 contain some out-of-date information regarding PIs, personnel, and locations. These AHDs were reportedly last renewed June 2006, and there do not appear to be electronic copies.	PUB-3000 (Chapter 6 -Safe Work Authorizations, Appendix D -AHD Process) requires that Formal Authorizations to be renewed approximately annually, or whenever work changes significantly.	Corrective Action: Update AHD BE1016, 209, 210, and 211 with current information describing the work (e.g., PIs, personnel, and locations).
20	55-208 Gibbs	Activity Hazard Document (AHD), Health Hazard Gases Finding: Two cylinders of ammonia gas (lecture bottles) and one cylinder of carbon monoxide (30lb, 16X19) are present in a steel drum in the middle of Room 208. Health hazard gases must be stored inside exhausted enclosures.	PUB-3000 (Chapter 13 - Gases, Section 13.7.7 Ventilation) requires gas cylinders of NFPA Classes 3 and 4 gases (and NFPA Class 2 gases with no physiological warning properties) to be kept in laboratory hoods or gas cabinets. Ammonia is a Class 3 health hazard and carbon monoxide is a Class 2 health hazard gas with poor warning properties.	Corrective Action: Securely mount inside the lab hood(s) the two cylinders of ammonia gas (lecture bottles) and one cylinder of carbon monoxide (30lb, 16X19) that are currently in a steel drum in the middle of Room 208. Return these gases to the vendor if they are not needed.

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<i>Lettered Items are Observations - a number following a letter, e.g., A.1, refers to an instance of the observation.</i>				
<i>Numbered Items are Findings - a number following a Finding number, e.g., 1.1, refers to an instance of the observation.</i>				
21	55-208	Activity Hazard Document (AHD), Eyewash & Shower (E/S) Finding: The operation described in AHD BE1016 requires an E/S in the lab. The location in the AHD that is approved for this operation is 55-214, where an E/S unit that meets LBNL standards is present. The operation is now in 55-208 where there is a hand-spray unit and shower that are separated by distance. In addition, the shower handle is blocked from access by the lab's fire door which is propped open. There is no eyewash unit in 55-208.	A) PUB-5341- Chemical Hygiene and Safety Plan (CHSP) E/S; B) ANSI Z358.1-2004 Standard for E/S; and C) AHD BE1016. The CHSP requires that "...The selection, installation, and use of eyewash fountains and safety showers must comply with the ANSI Z358.1. The eyewash and safety shower must be aligned vertically to allow the eyes and body to be flushed simultaneously. Access to these facilities must remain open at all times and reachable within 10 seconds from the source of the hazard. Paths to these units must be maintained free of obstructions." The CHSP also states that "When an eyewash is required, a combination eyewash safety shower unit will be installed. Handheld drench hoses are permitted to supplement, but are not to be supplied in place of plumbed emergency eyewash fountains and safety showers." In addition, ANSI Standard (Appendix B) states that a door is considered an obstruction. Lastly, AHD 1016B states that the E/S for this operation is in 55-214.	Corrective Action: Install an emergency eyewash and shower unit in 55-208 that meets the criteria of the LBNL Chemical Hygiene and Safety Plan and ANSI ANSI Z358.1-2004 Standard for Emergency Eyewash and Shower Equipment, or move the operation back to 55-214.
22	55-208	Activity Hazard Document (AHD), Fire Door Finding: The Fire door between the 55-208 lab and the corridor is propped open. Propping this door open defeats the door's fire protection and blocks access to the handle used to activate the emergency shower. Water reactive (e.g., sodium metal) and flammable hazardous materials that may ignite are used in 55-208.	A) 2001 California Building Code, Section 713-Fire Resistive Assemblies for Protection of Openings, B) PUB-5341- Chemical Hygiene and Safety Plan (CHSP) Emergency Eyewashes and Safety Showers.	Corrective Action: Keep the fire door closed or install an approved self-closing device that is activated in case of a fire or smoke event. Do not block the emergency shower handle.
23.1	74-166 Weier	SAA Finding: 1 SAA was not in compliance	LNBL PUB 3092, Guidelines for Generators to Meet HWHF Acceptance Requirements for Hazardous, Radioactive, and Mixed Wastes at Berkeley Lab	Corrective Action: SAAs were reviewed and specific deficiencies were discussed with the Division.
23.2	70A-1121B Blakely	SAA Finding: 1 SAA was not in compliance	LNBL PUB 3092, Guidelines for Generators to Meet HWHF Acceptance Requirements for Hazardous, Radioactive, and Mixed Wastes at Berkeley Lab	Corrective Action: SAAs were reviewed and specific deficiencies were discussed with the Division.
24	70A-4475 Torok	Biosafety, Eyewash Testing Finding: The emergency eyewash and shower unit (E/S) in 70A-4475 was last tested on 1/17/06 by Tamas Torok, as indicated on the E/S unit's tag.	PUB-3000 (Chapter 4, Section 4.8.1) and PUB-5341, Chemical Hygiene and Safety Plan (Emergency Procedures and Equipment section) requires that E/S units must be flushed at least quarterly and inspection tags must be filled out to document this activity.	Corrective Action: Ensure the emergency eyewash and shower unit in 70A-4475 is flow tested quarterly.

Appendix E-1
Findings and Observations Detail (see App. E-2 for Training Finding)

Item No.	Building & Room #s	Description of Finding (#'d items) or Observations (lettered items)	Regulation or Policy Citation	Recommendation or Corrective Action
<p><i>Lettered Items are Observations - a number following a letter, e.g., A.1, refers to an instance of the observation.</i></p>				
<p><i>Numbered Items are Findings - a number following a Finding number, e.g., 1.1, refers to an instance of the observation.</i></p>				
<p>E</p>	<p>Life Sciences Division</p>	<p>Job Hazards Questionnaire (JHQ) Observation: The Life Sciences Division and PGF use division-specific JHQs in an effort to tailor the questions to their needs. Other LBNL divisions use the Lab-wide JHQ. In some topic areas, the LSD's JHQ does not cover the topic, asks fewer questions, and/or asks different questions than the questions presented on the Lab-wide JHQ. Differences between the LSD JHQ and Lab-wide JHQ may in some cases contribute to deficiencies in training. For example, questions in the LSD JHQ related to biohazardous waste, biosafety, and bloodborne pathogens are different than the questions in the Lab-wide JHQ. This difference may be why the highest number of findings resulting from this IFA is related to the completion of training courses.</p>	<p>PUB-3000, Chapter 24, Environment, Health, & Safety Training.</p>	<p>Corrective Action: The Life Sciences Division should ensure the JHQ questions used by their division are consistent with the Lab-wide JHQ questions.</p>

Appendix E-2
Training Finding Detail

Instance	Building & Room #s	Description of Finding (#'d items) or Observations (lettered items)	Regulation or Policy Citation	Recommendation or Corrective Action
2.1	977-224, 225, 229, 231, 235, 236 Bissell	Biosafety, Training Courses Finding: The training profiles of twelve employees listed in the BUA were selected randomly. Six out of 12 employees (50%) completed both EHS 739 Biosafety & EHS 730 Medical/Biohazardous Waste.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), LBNL Training JHQ and course descriptions, and BUA B079-030306.	Corrective Action: Review training profiles of employees and ensure they complete EHS 739 Biosafety & EHS 730 Medical/Biohazardous Waste.
2.2	70A-70A-1103, 1119, 1121A B C Blakely	Biosafety, Training Courses Finding: The training profiles of seven employees listed in the BUA were selected randomly. Six out of 7 employees (86%) completed both EHS 739 Biosafety & EHS 730 Medical/Biohazardous Waste. Chris Rosen has not completed EHS 739 Biosafety.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), and LBNL Training JHQ and course descriptions.	Corrective Action: Ensure Chris Rosen completes EHS 739 Biosafety.
2.3	55-122, 139 Budinger	Biosafety, Training Courses Finding: The training profiles of five employees listed in the BUA and ECP were selected. One out of 5 employees (20%) completed all of the following courses: EHS 739 Biosafety, EHS 730 Medical/Biohazardous Waste, and EHS 735/738 Bloodborne Pathogen.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), LBNL Training JHQ and course descriptions, and BUA B161-072706. Also note OSHA Bloodborne Pathogens Standard 1910.1030(g)(2) requires that all employees with occupational exposure to BBPs complete training at the time of initial assignment to tasks and annually thereafter.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ECP and ensure training requirements are completed.
2.4	84-155, 175 Campisi	Biosafety, Training Courses Finding: The training profiles of six employees listed in the BUA were selected. Two out of six employees (33%) completed both EHS 739 Biosafety and EHS 730 Medical/Biohazardous Waste.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), LBNL Training JHQ and course descriptions, and BUA B055-061306.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ensure training requirements are completed.
2.5	84-217, 225, 265, 268, 2035 Chasis	Biosafety, Training Courses Finding: The training profiles of four employees listed in the BUA were selected. One out of four employees (25%) completed both EHS 739 Biosafety and EHS 730 Medical/Biohazardous Waste. EHS 735/738 Bloodborne Pathogen training was not appraised, since BBP work has not yet started.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), LBNL Training JHQ and course descriptions, and BUA B045-060906.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ensure training requirements are completed.

Appendix E-2 Training Finding Detail

Instance	Building & Room #s	Description of Finding (#'d items) or Observations (lettered items)	Regulation or Policy Citation	Recommendation or Corrective Action
2.6	74-217, 225, 265 Conboy	Biosafety, Training Courses Finding: The training profiles of seven employees listed in the BUA were selected. Three out of seven employees (43%) completed both EHS 739 Biosafety and EHS 730 Medical/Biohazardous Waste.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), LBNL Training JHQ and course descriptions, and BUA B100-061606.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ensure training requirements are completed.
2.7	74-319A, 316B, 344, 331, 3110, 3050 Cooper	Biosafety, Training Courses Finding: The training profiles of nine employees listed in the BUA were selected. Four out of nine employees (44%) completed both EHS 739 Biosafety and EHS 730 Medical/Biohazardous Waste.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), and LBNL Training JHQ and course descriptions.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ensure training requirements are completed.
2.8	55-139, 139A Eberling	Biosafety, Training Courses Finding: The training profiles of three employees who do work under the BUA were selected. One out of the 3 employees (33%) completed all of the following courses: EHS 739 Biosafety, EHS 730 Medical/Biohazardous Waste, and EHS 735/738 Bloodborne Pathogens.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), LBNL Training JHQ and course descriptions, and BUA B129-040506.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ensure training requirements are completed.
2.9	977-216, 217, 212 Gray	Biosafety, Training Courses Finding: The training profiles of six employees who do work under the BUA were selected. Four out of the six employees (64%) completed all of the following courses: EHS 739 Biosafety, EHS 730 Medical/Biohazardous Waste, and EHS 735/738 Bloodborne Pathogens.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), LBNL Training JHQ and course descriptions, and BUA B122-021406.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ensure training requirements are completed.
2.10	74-344, 346, 384 Harris	Biosafety, Training Courses Finding: The training profiles of four employees who do work under the BUA were selected. None of these four employees had completed both EHS 739 Biosafety and EHS 730 Medical/Biohazardous Waste.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), and LBNL Training JHQ and course descriptions.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ensure training requirements are completed.
2.11	1-367, 368, 271, 330, 331 Jap	Biosafety, Training Courses Finding: The training profiles of six employees who do work under the BUA were selected. Two of the six employees (33%) had completed both EHS 739 Biosafety and EHS 730 Medical/Biohazardous Waste.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), LBNL Training JHQ and course descriptions, and Biological Use Authorization (BUA) B077-061506.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ensure training requirements are completed.

Appendix E-2 Training Finding Detail

Instance	Building & Room #s	Description of Finding (#'d items) or Observations (lettered items)	Regulation or Policy Citation	Recommendation or Corrective Action
2.12	84-118, 155, 161, 161A, 165, 175 Kohwi	Biosafety, Training Courses Finding: The training profiles of eleven employees who do work under the BUA were selected. Five of these eleven employees (45%) had completed both EHS 739 Biosafety and EHS 730 Medical/Biohazardous Waste.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), and LBNL Training JHQ and course descriptions.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ensure training requirements are completed.
2.13	74-217, 225, 265B, 268 Krauss	Biosafety, Training Courses Finding: The training profiles of both employees who are listed in the BUA were selected. Both employees have not completed either EHS 739 Biosafety and/or EHS 730 Medical/Biohazardous Waste.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), LBNL Training JHQ and course descriptions, and Biological Use Authorization B085-011706.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ensure training requirements are completed.
2.14	73-001C, 108, 109, 110 Stampfer	Biosafety, Training Courses Finding: The training profiles of three employees who are listed in the BUA were selected. One of these employees (33%) had completed all of the following courses: EHS 739 Biosafety, EHS 730 Medical/Biohazardous Waste, and EHS735/738 Bloodborne Pathogen.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), LBNL Training JHQ and course descriptions, and Biological Use Authorization B151-042106.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ensure training requirements are completed.
2.15	74-152, 166 Weier	Biosafety, Training Courses Finding: The training profiles of three employees who are listed in the BUA were selected, and completion of EHS 739 Biosafety and EHS 730 Medical/Biohazardous Waste was appraised. All 3 employees completed EHS 739 Biosafety, but only one of these employees had completed EHS 730 Medical/Biohazardous Waste.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), LBNL Training JHQ and course descriptions, and Biological Use Authorization B111-060906.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ensure training requirements are completed.
2.16	977-239, 240, 242 Yaswen	Biosafety, Training Courses Finding: The training profiles of seven employees listed in the BUA and ECP were selected. Two out of seven employees (29%) completed all of the following courses: EHS 739 Biosafety, EHS 730 Medical/Biohazardous Waste, and EHS 735/738 Bloodborne Pathogen.	PUB-3000 (Chapter 20, Section 20.5 and Chapter 4, Section 4.7), LBNL Medical/Biohazardous Waste Guidelines (Section 6.1), LBNL Biosafety Manual (Training, Responsibilities, and Biosafety Waste), LBNL Training JHQ and course descriptions, and BUA B161-072706. Also note OSHA Bloodborne Pathogens Standard 1910.1030(g)(2) requires that all employees with occupational exposure to BBPs complete training at the time of initial assignment to tasks and annually thereafter.	Corrective Action: Review the JHQs and training profiles of persons covered by the BUA and ECP and ensure training requirements are completed.

**Attachment 1 - Life Sciences Division IFA Plan
Submitted to Steering Committee**

Integrated Functional Appraisal Plan

FY 2006

Division:	Life Sciences
Team Leader:	Ross Fisher
Division Safety Coordinator:	Tony Linard
DOE BSO Field Program Representative:	Joe Krupa

Team Members / Subject Matter Expertise

Name	Discipline
Chris Donahue	Radiological Control
Ross Fisher	Industrial and Laboratory Safety
Bruce King	Biosafety and Chemical and Industrial Hygiene
Matt Kotowski	Hoisting and Rigging
Amy Tanouye	Waste Management
Chan Ho Yi	Waste Management

A list of formal authorizations and respective work spaces reviewed is attached and includes:

- Biological Use Authorizations (BUA)
- Radiological Authorizations
 - Radiological Work Authorizations (RWA)
 - Low Activity Source (LAS)
 - Sealed Source Authorization (SSA)
 - X-ray Authorization (X-ray)
- Activity Hazard Documents (AHD)
- Satellite Accumulation Areas (SAA)
- Crane and Hoist Certification

The Life Sciences Division does not engage in work requiring Confined Space, Surface Penetration or Lock Out/Tag Out hazardous work permits. There are no industrial truck operators. One laboratory uses a hydrogen/oxygen torch and requires a Fire Safety Permit.

IFA Team Leader

Date

IFA Steering Committee Chair

Date

Appendix B - IFA Documentation Reference Sheet

DOCUMENT TYPE/TITLE	Reference (Doc #, dates, etc.)**
Facility Permits / Authorizations	
Safety Analysis Documents (SADs) Final Safety Analysis Documents (FSADs)	Accelerator safety covered by RWA 1077
Discharge permits (sewer, storm water, air)	None
NEPA/CEQA documents	None
Formal Work Authorizations	
Activity Hazard Documents (AHDs)	<i>AHD 203 – Large Gamma Irradiator</i>
	<i>AHD 209 - Hydrogen Chloride Gas</i>
	<i>AHD 210 – Ammonia Compressed Gas</i>
	<i>AHD 211 – Carbon Monoxide Compressed Gas</i>
	<i>AHD 231 – Fluorine Compressed Gas for Fluorine-18 Production</i>
	<i>AHD BE1016 – Water Reactive Solvent Stills (Sodium Metal in Tetrahydrofuran and Calcium Hydride in DCM)</i>
	<i>AHD 3144 – Preparation of Azidoheptapyranose</i>
	<i>Note: Laser AHDs 2031, 2078, BE1005, and BE1017 will be addressed by Laser Safety Officer outside of the IFA process</i>
Radiological Work Authorizations (RWA)	<i>RWA 1001, 1004, 1010, 1013, 1018, 1041, 1049, 1050, 1062, 1063, 1077, 1085, 1102, 1160</i>
Radiological Work Permits (RWP)	<i>None</i>
General License Authorizations (GLA)	<i>None</i>
Low Activity Source Authorizations (LAS)	<i>LAS L010</i>
Sealed Source Authorizations (SSA)	<i>SSA 171, 172, 173</i>
X-ray Authorizations (XA)	<i>X-Ray 001-366, 055-122, 055-125, 070A-1103, 074-344, 977-203</i>
Human Subjects	<i>Not Reviewed</i>
Biological Use Authorizations/Registration	<i>BUA-B002, B045, B051, B055, B066, B071, B077, B079, B084, B085, B099, B100, B111, B113, B122, B129, B136, B151, B160, PET/SPECT</i>
Waste Management Group information on Satellite Accumulation Areas (SAAs) and Waste Accumulation Areas (WAAs)	<i>B1 (Rms 116, 160H, 260, 267, 316, 322,330, 358, 364, 366, 373, loading dock) B55 (Rms 116, 118, 120, 127, 151, 208, 214) B64 (Rms 102, 223, 224, 234) B73 Rm 109 B74 (Rms 166, 176, 217, 252, 265, 312, 316, 330, 346, 378, 384, 3050, 3080, 3110) B84 (Rms 118, 122, 163, 175, 205, 255, 355) B0977 (Rms 116, 175, 204, 209, 210, 217, 231, 240)</i>

Hazardous Work Authorization / Permits	
Confined Space Permit	<i>None</i>
Energized Work Permit (A and B)	<i>None</i>
Fire Safety Permit	<i>Building 64 Room 102</i>
Lock Out Tag Out	<i>None</i>
Surface Penetration Permit	<i>None</i>
Cranes and Hoists	<i>Building 1 Rooms 158, 160G, Building 55 Rooms 121, 123</i>

IFA Team Leader Signature

Date

*Please see attached schedules for authorization locations and dates proposed for appraisals.

AHD and crane reviews are yet to be scheduled. See the "Authorization Map" for the location of each authorization.

			= completed								
Bldg	AHD	BUA	RWA	RWP	LAS	X-Ray	SSA	SAA		Other	Crane/Hoist
1		B077-2,R,H	1001-I		L010	366		116	330		158
			1004-II					160H	358		160G
			1160-II					260	364		
								267	366		
								316	373		
								322			
55	209	B129-2,R	1010-II			122	172-I	116	208		121
	210	Budinger	1013-III			125		118	214		123
	211		1041-III					120	load dock		
	BE1016							127			
	3144							151			
56	231		1077-III								
64			1102-I					102	224	FSP 102	
								223	234		
70A		B002-2,R	1018-I			1103					
		B127-2,H,B									
		B071-2,R,H									
73		B151-2,R,H,B					109				
74	203	B045-2,4,H,B	1063-II			344	171-III	166	330		
		B066-2,R,H					173-I	176	346		
		B085-2,R,H						217	378		
		B100-2,R,H						252	384		
		B111-2,H,B						265	3050		
		B136-2,H						312	3080		
		B160-2,H,B						316	3110		
84		B055-2,R,H	1049-I					118	205		
		B113-2,R,H	1085-II					122	255		
								163	355		
								175			
977		B051-2,R,H,B	1050-I			203		116	217		
		B079-2,R,H	1062-II					175?	231		
		B084-2,R,H						204	240		
		B099-2,R,H						209			
		B122-2,R,H,B						210			

Proposed Date and General Time Window	Appointed Time	Bldg	Rooms	BUA Number	Principal Investigator	Designated Representative
Friday, July 7, 0930 - 11:30 am	9:00 - 10:00	70A	4475	B002	Tamas Torok	
Monday, July 10, 9:30am - 12 noon	9:30 - 10:30	74	217, 225, 265, 268	B045	Joel Anne Chasis	Gloria Lee
	10:45 - 11:45	74	217, 225	B100	John Conboy	Marilyn Parra
Tuesday, July 11, 9:00 - 10:00 am	9:00 - 10:00	55	139, 139A	B129	Jamie Eberling	
Tuesday, July 11, 1:00 - 5:00 pm	1:00 - 2:00	74	319, 330, 331, 335, 344, 346, 349A, 350, 3050, 3070, 3080, 3110	B066	Priscilla Cooper	Cliff Ng
	2:15 - 3:15	74	174, 363, 370, 378, 385, 385A	B160	Andrew Wyrobek	Francesco Marchetti
	3:30 - 4:30	74	217, 225, 265B, 268	B085	Sharon Krauss	Minjoung Go
Thursday, July 13, 9:00 - 11:00 am	9:00 - 10:00	74	152, 166	B111	Ulli Weier	
	10:00 - 11:00	84	155, 161, 175, and 74-231, 227, 1029 (meet at 84-118)	B113	Nori Kohwi	
Thursday, July 13, 3:00 - 5:00 pm	3:00 - 4:00	70A	1121, 1103, 1113	B071	Eleanor Blakely	
	4:00 - 5:00	74	344, 346, 384, 385, 385A	B136	Shyamala Harris	
Monday, July 24, 11:00 - 12:00 noon	11:00 - 12:00	977	203, 208, 209, 210, 211 , and 74-252	B099	Barcellos-Hoff	Shraddha Ravani or Joni Mott
Wednesday, July 26, 10:00 - 11:00 am and 3:00 - 5:00 pm	10:00 - 11:00	977	212, 216, 217	B122	Joe Gray	Wen-Lin Kuo
	3:00 - 4:00	977	204, 229, 231, 235, 239, 244, 245 , and 74-252	B079	Mina Bissell	Genee Lee
	4:00 - 5:00	977	238, 239, 240, 242	B051	Paul Yaswen	
Thursday, July 27, 11:15 - 12:15 pm	11:15 - 12:15	73	108, 109,110, 001C	B151	Martha Stampfer	James Garbe
Friday, July 28, 8:30 - 10:45 am	8:30 - 9:30	55	122, 139	PET/SPECT	Tom Budinger	Suzanne Baker
	9:45 - 10:45	84	155, 175	B055	Judith Campisi	Ying Zou
Monday, July 31, 11:00 - 12:00 noon	11:00 - 12:00	1	330, 333, 367, 368	B077	Bing Jap	Peter Walian

Bldg	Authorization	Class	Due	Status	PI	Nuc	Bldg	Rm	Bldg	Rm	Bldg	Rm	Proposed Schedule
1	LAS L010		2006/04	R	Downing, Kenneth		1	112, 116, 119					Group 1 Thursday, July 20, 2006 Morning 0900 - 1200
	RWA 1001	I	2006/07	R	Hang, Bo	P32	1	322, 361, 373					
	RWA 1004	II	2006/10	Am	Bielicki, John		1	373, 377A					
	X-Ray 001-366		2006/05	R	Game, John		1	366					
55	RWA 1010	II	2006/05	R	Taylor, Scott		55	116, 120, 122, 126, 128, 136, 139, 139, 139hall, 151					Group 2 Thursday, July 20, 2006 Afternoon 1300 - 1730
	RWA 1013	III	2006/04	R	Vanbrocklin, Henry		55	120, 126, 128, 134, 139, 139hall, 151					
	RWA 1041	III	2006/11	R	Budinger, Thomas		55	120, 122, 134, 139A, 139hall, 151, 200	74	285, 2011			
	SSA 172	I	2006/05	R	Huber, Jennifer		55	134, 139					
	X-Ray 055-122		2006/11	R	Reutter, Bryan		55	122					
X-Ray 055-125		2006/11	R	Derenzo, Stephen		55	125						
56	RWA 1077	III	2006/05	R	O'Neil, James		56	100, 101	55	134			
64	RWA 1102	I	2007/09	R	Hoskins, Roger		64	234					
70A	X-Ray 070A-1103		2007/05	R	Blakely, Eleanor		70A	1103					Group 3 Friday, July 21, 2006 Morning 0830 - 1200
	RWA 1018	I	2007/01	R	Kronenberg, Amy		70A	1115					
	RWA 1063	II	2007/09	R	Cooper, Priscilla		74	312, 330, 330A, 344, 350	70A	1103			
	SSA 171	III	2006/04	R	Linard, Anthony		74	144A					
74	SSA 173	I	2006/04	R	Miller, Jack		74	131					
	X-Ray 074-344		2007/05	R	Rydberg, Bjorn		74	344					
	RWA 1049	I	2006/08	R	Campisi, Judith		84	157	74	330			
84	RWA 1085	II	2006/06	R	Kohwi, Yoshinori		84	153, 155, 161	74	238C			
	RWA 1050	I	2006/10	R	Schwarz, Richard		977	205					
977	RWA 1062	II	2006/11	R	Yaswen, Paul		977	205, 240					Group 4 Wednesday July 26, 2006 Afternoon 0945 - 1400
	X-Ray 977-203		2006/11	N	Costes, Sylvain		977	203					

Note: A placeholder for time 0830 - 1015 hours was set on calendar for Friday, July 28 and Wednesday, August 2 for make up slots

Thursday, July 20 [0800 - 1700]

Group 1 - Morning - **Donner** (LAS L0101; RWAs 1001, 1004; X-ray 366)

Group 2 - Afternoon - **B55** (RWAs 1010, 1013, 1041; SSA 172; X-rays 122, 125); **B56** (RWA 1077); **B64** (RWA 1102)

Friday, July 21 [0830 - 1200]

Group 3 - Morning - **B70A** (X-ray 1103; RWA 1018); **B74** (RWA 1063; SSA 171, 173; Xray 344); **B84** (RWA 1049, 1085)

Wednesday, July 26 [1000 - 1330]

Group 4 - **B977** (RWAs 1050, 1062; X-ray 203)

Make Up Times

Friday, July 28 [0830 - 1300]

Wednesday, August 2 [1000 - 1230]

Subject: Intergrated Functional Appraisal(IFA) Inspection (74,84)

From: ChanHo Yi <CHYi@lbl.gov>

Date: Wed, 12 Jul 2006 10:16:53 -0700

To: Ulli Weier <UGWeier@lbl.gov>, Daniel E Callahan <DECallahan@lbl.gov>, Philippe D Gascard <PDGascard@lbl.gov>, Berbie M Chu <BMChu@lbl.gov>, Gloria M Lee <GMLee@lbl.gov>, Daojing Wang <DJWang@lbl.gov>, Cliff Ng <Cliff_Ng@lbl.gov>, Sylvia Ahn <SAhn@lbl.gov>, G Shyamala Harris <Shyamala_Harris@lbl.gov>, John Clarke <JClarke@lbl.gov>, Claudia Wiese <CWiese@lbl.gov>, Nori Kohwi <YKohwi@lbl.gov>, Ying Zou <YZou@lbl.gov>, Abby F Dernburg <AFDernburg@lbl.gov>, James C Garbe <JCGarbe@lbl.gov>, Judith Campisi <JCampisi@lbl.gov>, Roshni Kasad <RAKasad@lbl.gov>

CC: Ross W Fisher <RWFisher@lbl.gov>, Tony Linard <AMLinard@lbl.gov>

Good morning everyone, this is ChanHo Yi your generator assistant with Waste Management and I was asked to inspect your SAA and your Radioactive Waste collection areas. I will be doing this inspection on July 25th starting around 10:00 am and would like to know if you would like to accompany myself and couple other people while I'm doing the inspections. If you are not able to attend during this day, please let me know if you would like to have anyone else represent your group. The inspection should take no more then 30 minutes for each SAA. If you have any questions please feel free to contact me. I have attached two pdf files which will be used as the guidelines for the inspection. Thank you

ChanHo Yi

ChanHo Yi < CHYI@LBL.GOV > Certification Specialist Lawrence Berkeley National Laboratory Environmental, Health & Safety

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RadioactiveWastePoster.pdf	Content-Type: application/pdf Content-Encoding: base64
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Subject: Intergrated Functional Appraisal Inspection (Potter)

From: ChanHo Yi <CHYi@lbl.gov>

Date: Wed, 12 Jul 2006 09:58:34 -0700

To: Heidi S Feiler <HSFeiler@lbl.gov>, Shraddha A Ravani <SARavani@lbl.gov>, Sandhya Bhatnagar <SBhatnagar@lbl.gov>, Nicholas J Wang <NJWang@lbl.gov>, Eva H Lee <EHLee@lbl.gov>, Batul Q Merchant <BQMerchant@lbl.gov>, Paul Yaswen <P_Yaswen@lbl.gov>, Wen-Lin Kuo <WLKuo@lbl.gov>

CC: Ross W Fisher <RWFisher@lbl.gov>, Tony Linard <AMLinard@lbl.gov>

Good morning everyone, this is ChanHo Yi your generator assistant with Waste Management and I was asked to inspect your SAA and your Radioactive Waste collection areas. I will be doing this inspection on July 24th starting around 1:30pm and would like to know if you would like to accompany myself and couple other people while I'm doing the inspections. If you are not able to attend during that day, please let me know if you would like to have anyone else represent your group. The inspection should take no more then 30 minutes for eash SAA. If you have any questions please feel free to contact me. I have attached two pdf files which will be used as the guidelines for the inspection. Thank you

ChanHo Yi

ChanHo Yi <CHYI@LBL.GOV>
Certification Specialist
Lawrence Berkeley National Laboratory
Environmental, Health & Safety

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RadioactiveWastePoster.pdf	Content-Type: application/pdf Content-Encoding: base64
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Subject: IFA SAA Inspections

From: Amy Tanouye <PATanouye@lbl.gov>

Date: Fri, 07 Jul 2006 08:24:36 -0700

To: Alison N Killilea <ANKillilea@lbl.gov>, Jonathan Remis <JPreimis@lbl.gov>, John K Bielicki <JKBielicki@lbl.gov>, timiras@berkeley.edu, Bing Jap <BKJap@lbl.gov>, Bo Hang <Bo_Hang@lbl.gov>, John Game <JCGame@lbl.gov>, Steve-O Hanrahan <SMHanrahan@lbl.gov>, Scott E Taylor <SETaylor@lbl.gov>, Jenny Huber <JSHuber@lbl.gov>, Andy Gibbs <ARGibbs@lbl.gov>, Mustafa Janabi <MJanabi@lbl.gov>, Mark T Stapleton <MTStapleton@lbl.gov>, Yetta D Porter-Chapman <YDPorter-Chapman@lbl.gov>

CC: Tony Linard <AMLinard@lbl.gov>, Ross W Fisher <RWFisher@lbl.gov>

All,

We will be coming by your labs to conduct IFA inspections of your SAA's on the following dates: Monday, July 17 and Tuesday, July 18. If you cannot be available on these dates, please have a designated representative available.

Thanks in advance,

-Amy