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C-A OPERATIONS PROCEDURES MANUAL

1.10 C-A Environmental, Safety and Health Policy

Text Pages 2 through 7

Attachments

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials

Approved: ***Signature on File*** _____
Collider-Accelerator Department Chairman Date

R. Karol, E. Lessard

1.10 C-A Environmental, Safety and Health Policy

1. Purpose

1.1 This procedure defines the ESH policy for C-A Department managers, supervisors, staff and users.

1.1.1 Each group/division weekly working meeting shall include a 5-minute safety/security discussion.

1.2 This procedure defines the role of the standing committees that are assigned to review projects and experiments for ESH.

1.3 This procedure helps ensure that formal C-A programs in ESH lead to:

1.3.1 Safe and healthy workplaces and conditions of employment for employees, visitors, contractors, and experimenters (users).

1.3.2 Protection of the environment against unwarranted impacts,

1.3.3 Implementation of pollution prevention techniques,

1.3.4 Implementation of a Human Performance Program (HU).

1.3.5 Compliance with the requirements in the Standards Based Management System and C-A procedures.

2. Responsibilities

2.1 The C-A Department Chair shall ensure BNL Policies and Standards of Performance, BNL Policy on Alcohol and Substance Abuse, and the Environmental Stewardship Policy are integrated into C-A Department policies and procedures.

2.2 The C-A Department Chair shall ensure requirements in the Standards Based Management System are integrated into C-A Department policies and procedures.

2.3 The C-A Department Chair shall form one or more standing ESH Committees to assist in the implementation of this procedure.

2.4 The C-A Department Chair shall designate each Committee by issuing a charge for the duties of each committee. See Section 8.0.

2.5 At the C-A Department Chair's discretion, the membership of the Committees, including the Committee Chairs, shall be revised and a new list of members be distributed by the department secretary.

2.6 The following standing Committees shall be created by the C-A Department Chair and maintained with formal operating procedures in Chapter 9 of the C-A OPM:

2.6.1 Radiation Safety Committee (RSC)
2.6.2 Experimental Safety Review Committee (ESRC)
2.6.3 Accelerator Systems Safety Review Committee (ASSRC)
2.6.4 As Low As Reasonably Achievable (ALARA)
2.6.5 Safety Inspection (SI)
2.6.6 Human Performance Program Committee
2.6.7 Worker Occupational Safety and Health Committee (WOSH)

2.7 Managers/Group Leaders/Technical Supervisors, who conduct regular weekly working meetings, shall include at least a 5-minute discussion on a pertinent safety and/or security topic in order to maintain awareness and to disseminate important ESH, security or environment information.

3. Prerequisites

None

4. Precautions

None

5. Procedures

5.1 Each Committee shall ensure that C-A Department activities are reviewed against requirements in the Standards Based Management System and the C-A-OPM.

5.2 The RSC, ESRC, ALARA, and ASSRC Committees shall assure that:

5.2.1 Appropriate ESH design reviews for proposed construction, modifications and operations of the facilities and experiments meet the requirements of the BNL Subject Area Work Planning and Control for Experiments and Operations.

5.2.2 Procedures in Chapter 9 of the C-A OPM are implemented and followed.

5.3 The SI Committee shall assure that the C-A Department is conducting:

5.3.1 Safety, health and environmental inspections investigations of occupational illness, injuries, accidents and significant exposures per the requirements in the Standards Based Management System.

5.3.2 Procedures in Chapter 9 of the C-A OPM are implemented and followed.

5.4 The Human Performance Program Committee shall develop and assist with implementing a human performance improvement strategy such that,

5.4.1 line managers and supervisors use these principles in their daily activities and decisions,

5.4.2 a training and refresher training strategy is developed which has management endorsement and worker involvement.

5.4.3 Work planning errors and engineering design errors are reduced, and lessons are learned from events and occurrences.

5.5 The WOSH Committee shall assure arrangements and procedures are established and maintained for:

5.5.1 Receiving, documenting and responding appropriately to worker communications related to OSH.

5.5.2 Ensuring that the concerns, ideas and inputs of workers and their representatives on OSH matters are received, considered and responded to.

5.6 The C-A Associate Chair for ESSHQ shall ensure that the Department staff, users and the standing ESH Committees, have appropriate procedures to:

5.6.1 Ensure the implementation of the C-AD OSH management system defined in OPM 1.10.4, OSH Management Program Description.

5.6.2 Ensure the implementation of the C-AD EMS management system defined in OPM 1.10.2, Environmental Management Program Description.

5.6.3 Ensure the implementation of the BNL radiological control system as defined in SBMS.

5.6.4 Ensure the scope of work is defined for projects, machine evolutions, experiments or maintenance tasks.

5.6.5 Ensure Standards Based Management System ESH requirements are integrated into ESH Committee review processes.

5.6.6 Ensure hazards are identified, analyzed and categorized with regard to operations, maintenance, experiment and construction activities.

5.6.7 Ensure processes are defined and implemented, with a strong reliance on worker involvement and support from ESH Subject Matter Experts, including the Environmental Compliance Representative, to identify the appropriate environmental-control, hazards-control or work-control requirements.

5.6.8 Ensure environmental-control, hazards-control or work-control requirements

are integrated into staff and user procedures where appropriate.

5.6.9 Ensure the environmental-controls, hazards-controls or work-controls, including staff and user training, are implemented.

5.6.10 Ensure ESH roles and responsibilities of managers, users and staff are defined, accepted, and implemented.

5.6.11 Ensure the performance of work on operations, maintenance, construction or experimental activities is authorized. Authorization processes shall ensure:

5.6.11.1 Personnel are trained,
5.6.11.2 Hazards-controls, work controls, environmental controls and ESH support functions are in place,
5.6.11.4 Start-up approval for operations and experiments.

5.6.12 Ensure C-A Groups involved in operations, maintenance, experiments or construction conduct robust self-assessments to ensure the performance of activities meets customer and stakeholder expectations, conforms to BNL requirements stated in Standards Based Management System and C-A procedures, and ensure opportunities for improvements are identified and implemented.

5.6.13 Ensure clear and unambiguous ESH responsibilities are defines for C-A Personnel R2A2s and are understood by C-A managers, staff and users.

5.6.14 Ensure processes are defined and implemented to ensure that managers, staff and users are competent (i.e., trained and qualified) to carryout their R2A2s.

5.6.15 Ensure line and staff personnel use the available Human Performance tools to reduce errors and events.

5.7 The ESHQ Associate Chair shall make recommendations to the Department Chair so that the personnel and financial resources are provided to implement ESH Policy.

5.8 Transportation to and from BNL after Prolonged Working Hours – If C-AD staff have worked more than 16 straight hours, or if they have been called in after-hours for work, and they feel that driving home would be hazardous, they may take a taxi home and return to work by taxi with approval of a C-AD Supervisor or Manager. Taxi fare will be reimbursed by BNL petty cash. A receipt is required.

5.9 Personnel who oversee weekly working meetings shall include at least 5-minutes of discussion on safety and/or security.

5.9.1 The subject of these weekly sessions can be *specific* safety or security aspects of the work about to commence (enhanced work planning clearly meets this criterion) or *general* safety and/or security awareness in meetings not otherwise addressing any safety topic.

5.9.2 The group leader or other meeting leader is responsible for ensuring that one or more safety and/or security issues are discussed and for leading the discussion in the case of general safety and/or security topics.

5.9.3 These short discussions will keep safety and security in our minds so when we are on the job, or walking in a slippery area of the site during a snowstorm, we pay attention to details. The purpose here is not to fulfill a "requirement", but to develop a culture where we are aware of our surroundings and concerned for our own and our coworker's safety, and the security of valuable materials. The goal of zero injuries or illnesses, and zero thefts, is not specified to have a good record for audits, but to achieve a workplace where all staff go home each night without the need to deal with doctor visits, surgeries and limitations in their, and their families, lifestyles.

5.9.4 The ESSHQ Division will recommend topics which may be used at each weekly meeting.

6. Documentation

6.1 The Chairs of the respective Committees shall keep committee minutes and recommendations.

7. References

7.1 C-A Operations Procedure Manual

7.2 Standards Based Management System

7.3 BNL ESH Standard 1.3.5

7.4 BNL ESH Standard 1.3.6

7.5 R. Karol, Safety Initiative in Accordance with T. Kirk Requirements, September 25, 2003.

7.6 CR-CA-2006-0004 Copper Theft from B912, 3/9/06.

8. Attachments

8.1 Charge of the C-A Radiation Safety Committee.

8.2 Charge of the C-A Experimental Safety Review Committee.

8.3 Charge of the C-A Accelerator Systems Safety Review Committee.

8.4 Charge of the C-A Safety Inspection Committees.

8.5 Charge of the C-A ALARA Committee.

8.6 Charge of the WOSH Committee.

8.7 Charge of the Human Performance Program Committee (HU).

8.8 Examples of Safety/Security Division Topics for Weekly Working Meetings.

ATTACHMENT 8.1

Charge of the C-A Radiation Safety Committee

The C-A Radiation Safety Committee shall:

1. Develop guidelines for radiation safety specifications.

1. Review new or modified facilities or modes of operation for beam line safety, including review of:
   (a) operating limits and margins of uncertainty,
   (b) planned levels of radiation,
   (c) fault levels of radiation, and
   (d) controls to limit access and/or shut down the radiation producing devices.

3. Review radiation related problems, and when required, radiation related Occurrence Reports.

4. Recommend to line management the means and procedures to maintain those portions of the Accelerator Safety Envelope related to radiation protection. Usually these recommendations will be provided in the form of Main Control Room Checklists used at the start up of beam lines and experiments.

5. Provide technical review of Operations Procedures for beam line radiation safety and other radiological related procedures.

ATTACHMENT 8.2

Charge of the C-A Experimental Safety Review Committee

The Experimental Safety Review Committee shall:

1. Review conventional safety aspects of all experiments.

2. Establish a set of criteria that identify conventional safety items to be looked at in the review process consistent with BNL Subject Area Work Planning and Control for Experiments and Operations.

3. Perform a walk-through of experimental areas prior to initial start-up of the experiment in accordance with requirements in C-A-OPM 9.2.1. It is required that walk through be performed prior to subsequent running periods in order to ensure that ESRC recommendations continue to be implemented as intended.

4. Recommend to line management the means and procedures to maintain those portions of the Accelerator Safety Envelope related to conventional safety. Usually these recommendations will be provided in the form of Main Control Room Checklists used at the start up of beam lines and experiments.

5. Address broad conventional safety issues in the experimental areas, such as control of hazardous chemicals and flammable gas storage.

ATTACHMENT 8.3

Charge of the C-A Accelerator Systems Safety Review Committee

The Accelerator Systems Safety Review Committee shall:

1. Review conventional safety aspects of all new accelerator systems and beam line systems.

2. Establish a set of criteria that identify conventional safety items to be looked at in the review process consistent with the criteria used for experiments in BNL Subject Area Work Planning and Control for Experiments and Operations.

3. Perform a walk-through of accelerator areas prior to initial start-up of a new system.

4. Recommend to line management the means and procedures to maintain those portions of the Accelerator Safety Envelope related to conventional safety.

5. Assign a Committee member to represent the Committee during electrical or mechanical project design reviews.

ATTACHMENT 8.4

Charge of the C-A Safety Inspection Committee

The C-A Safety Inspection Committees shall be composed of members of the C-A and the BNL ESH Support Divisions. The SI Committee membership shall provide a mix of relevant disciplines and interest. The SI Committee shall:

1 Periodically inspect the facilities of the C-A as appropriate.

2 Write up violations, hazards or deficiencies cited by the Committee, and report to the responsible supervisor and Building Manager for corrective action.

3 Maintain inspection records database.

4 Use the guidelines for inspection in BNL ESH Standard 1.2.0, Appendix 1, General Guidance for the Conduct of Inspections.

ATTACHMENT 8.5

Charge of the ALARA Committee

The ALARA Committee shall:

1 Monitor the performance of the C-A Department with respect to ALARA goals.

2 Review germane C-A facilities, experiments or projects for ALARA, during the initial design stage.

3 Review accelerator operations that have a direct impact on creating activated materials, irradiating nearby facilities, or cause radioactive emissions or waste streams.

4 Keep all records that relate to facility, experiment or project reviews that are performed by the Committee.

5 Annually the Committee shall recommend ALARA goals to C-A Management. Before recommending goals, the Committee shall review the levels of occupational exposure, radioactive waste generation and ambient radiation levels in and around the C-A complex. Where appropriate, the Committee may choose to recommend goals for personnel exposure for specific major efforts or for specific groups within the complex. Where data is available, radioactive effluent discharge and radiological waste volume goals may be recommended.

ATTACHMENT 8.6

Charge of the Human Performance Program Committee (HU)

The HPP Committee shall:

1. Review HU training and make recommendations to senior management on effectiveness.

2. Review occurrences and critiques to determine if latent organizational errors are present and make recommendations to correct.

ATTACHMENT 8.7

Charge of the WOSH Committee

The Worker Occupational Safety and Health (WOSH) Committee shall ensure arrangements and procedures are established and maintained for:

- Receiving, documenting and responding appropriately to worker communications related to OSH
- Ensuring that the concerns, ideas and inputs of workers and their representatives on OSH matters are received, considered and responded to

Each quarter, the Committee shall review results of injury / illness investigations, Performance Indicator data, feedback from the Work Planning System, feedback from the Self Evaluation Program (OPM 9.4.2), Critiques and Occurrences and make appropriate recommendations.

From time to time and at the request of the Associate Chair for ESHQ, the Committee or designated members shall review and modify if necessary the Department's procedures, training documents, Workplace Hazard Identification and Risk Assessments and any modification or introduction of new work methods, materials, processes or machinery. The review shall be from the workers' perspective.

ATTACHMENT 8.8

Weekly Safety/Security Talk Topic Examples

1. Use a recent work plan that went well. Have the planner review how it was done and the thought process that went into doing the review.
2. Review how to LOTO a complex system, for example a power supply or water system that has multiple sources of power or water pressure.
3. Review how to safely shutdown power to a building during a fire. Include inside breakers and if needed, know how to shutdown from outside the building.
4. Review the hazards present in a particular building (tritiated water, rad materials, PCBs, chemicals, stored capacitors, batteries, gas bottles, vacuum chambers/pipe, SF6 gas mixtures, dewars, response to plugged dewars, etc.)
5. Review locations of fire alarm pull stations and extinguishers (if trained on their use) in a building.
6. Go over one of the OPMs related to emergency response by your group (OPM section 3 series).
7. Review a C-AD Critique or BNL Lesson Learned and how it applies to your area or equipment.
8. Discuss how an upcoming job can adversely effect the environment if something goes wrong.
9. Review a section of the ASE that applies to your area or equipment and the basis for the requirement.
10. Review the hazards and controls of a material that your group routinely works with (Be, tritiated water, lead, cryogenic liquids, gasses, vacuum, welding, machine shop tool safety, ladders, scaffolding, capacitors, inductors, breakers, etc)
11. Review a specific electrical rule (working hot permits, PPE rules, safe distances to energized circuits, shorting capacitors, using shorting sticks and their requirements for design, two-man rule, etc.)
12. Review the hazard controls section of the green work permit.
13. Review the use of the POM or SRD.
14. Discuss the importance of communications between groups working in a common area.
15. Discuss the use of Group LOTO vs individual LOTO.
16. Discuss the use of the Process Knowledge forms.
17. Discuss the metal recycle ban by DOE.
18. Review a standing RWP written for the Group's work (eg. Water group, Chipmunk source room, etc)
19. Review how to bypass the L18A CO2 system when entering >5 minutes.
20. Review "activation check" required rules.
21. Review a response to an "off-normal" event on a system or equipment that the group is responsible for.
22. Pick an OPM for the group's equipment and review startup or shutdown procedures. Get feedback at the discussion on how to improve.

ATTACHMENT 8.8 (continued)

Weekly Safety/Security Talk Topic Examples

23. Review Satellite Area rules.
24. Review the procedures for "return to work" in the OPM.
25. Review an old ORPs or Critique to see if we still implement the recommendations of the old report. It also refreshes our memory on things that may not have happened for a long time.
26. Discuss how to RSLOTO an area to be safe while the beam is on.
27. Review the logic of critical devices in ACS or PASS and how they protect you.
28. Review the group's individual radiation dose history for the year so they are reminded of where they stand.
29. Discuss a particular OSHA rule and the technical basis (if known).
30. Discuss/review requirements for security of valuable materials (C-A-OPM 1.20).
31. Discuss recent findings of valuable materials that were not properly secured.
32. Human Performance Program expectations and examples of HU success stories.