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C-A OPERATIONS PROCEDURES MANUAL

9.5.7 ALARA Goals

Text Pages 2 through 4

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<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
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Approved: _____ *Signature on File* _____
Collider-Accelerator Department Chairman Date

P. Bergh

9.5.7 ALARA Goals

1. Purpose

- 1.1 This procedure provides guidelines for the C-A Department Chair and the ALARA Committee, or designees, to determine, achieve, and evaluate exposure reduction goals.
- 1.2 Annual collective radiation dose goals shall be established as one performance indicator of the effectiveness of the C-A radiological program. Additional goals, such as the number of contamination occurrences or total activity (milli-curies) of authorized radioactive liquid effluent releases may also be set.
- 1.3 Goals are a tool to maintain exposures within C-A Administrative Control Levels (ACLs) and to facilitate an effective ALARA program. Radiological performance goals shall be measurable, achievable, and meaningful in promoting improvement.
- 1.4 Facility collective dose (person-rem) is based on planned operational and maintenance activities for the C-A Department. The collective dose performance goal is not meant to be a target to be achieved. Rather, the goal is intended to encourage improvement in the C-A radiological work procedures and ensure the collective doses are As Low As Reasonably Achievable (ALARA).

2. Responsibilities

- 2.1 Each year the C-A Department Chair is responsible for establishing a collective dose goal based upon the ALARA Committee's recommendation. Other radiological performance goals may also be established.
- 2.2 The ALARA Committee is responsible to recommend to Management realistic goals for the average individual dose and group cumulative total dose where applicable.
- 2.3 The ALARA Committee is responsible for recommending ACLs to management.
- 2.4 The collective dose goal shall be based on the anticipated external and internal doses for a combined total of all individuals in the C-A facilities. The goal does not always have to be less than the preceding year's dose. However, the goal must be commensurate with C-A's mission, especially if the C-A programs are changing.
- 2.5 The C-A ALARA Committee shall meet at least semi-annually to review current and proposed radiological performance goals, and review the operational performance of the Department, with respect to its goals.

3. **Prerequisites**

None

4. **Precautions**

- 4.1 Realistic and measurable goals must be developed carefully, with significant consideration given to the interpretation of the results when obtained. For example, a prescription for next years dose goal shall account for planned intensity and running-time increases or decreases.
- 4.2 Goals should be developed with input from those responsible for performing the work.

5. **Procedure**

- 5.1 Annually, the C-A Department Chair shall set a collective dose goal at C-A. This performance goal shall be forwarded to the Radiological Engineering section of the Radiological Controls Division (RCD).
- 5.2 The ALARA Committee shall annually review the ACLs listed in C-A-OPM [9.5.1](#), and make appropriate recommendations to the C-A Department Chair.
- 5.3 As part of its semi-annual reviews, the ALARA Committee shall investigate the activities of functional groups or jobs that result in the highest collective doses.
 - 5.3.1 Leaders of the specific groups in the C-A Department that historically experience the greatest collective dose may come before the ALARA Committee in order to review their dose reduction strategies.
- 5.4 The ALARA Committee will determine whether the past year's goals were met and will make recommendations to the C-A Department Chair as to what actions might be taken when goals are not met.
- 5.5 Status reports on the Department's collective dose shall be reviewed by the Chair of the C-A ALARA Committee on a quarterly basis as a minimum. The C-A Facility Support (FS) Representative normally prepares these reports. Individual and collective dose equivalent (person-Rem) received from external and internal sources shall be reported as the total collective dose.
- 5.6 The C-A Department Chair shall prepare and document the annual dose goal as follows, and forward a copy to the Radiological Control Division (RCD) Head.

C-A DEPARTMENT

200x COLLECTIVE DOSE GOAL

The annual collective dose goal is established for the C-A Department for calendar year 200x. Staying below this goal is one indication of the effectiveness of the C-A radiological program. This goal is used as an indicator for the annual DOE/BSA contract performance measures program and is used to facilitate an effective ALARA program.

I. ANNUAL COLLECTIVE RADIATION DOSE GOAL FOR THE C-A DEPARTMENT

- a. The annual collective dose goal for all personnel within the C-A Department is xxx person-rem.

II. REPORTING

- A. The C-A ALARA Committee, or its designate, is responsible for tracking collective dose and reviewing the activities and dose of functional groups in the C-A Department.
- B. Collective dose shall include doses received from internal and external sources.

APPROVED _____
C-A Department Chair

DATE _____

6. **Documentation**

- 6.1 See step 5.6.

7. **References**

- 7.1 BNL Procedure HP-SOP-020, ALARA Program
- 7.2 Health Physics Manual of Good Practices for Reducing Radiation Exposures to Levels that are As Low As Reasonably Achievable (ALARA), PNL-6577.
- 7.3 BNL Radiological Control Manual, Article 131, Radiological Performance Goals.
- 7.4 [C-A-OPM 9.5.1 "C-A ALARA Policy and Responsibilities"](#)

8. **Attachments**

None