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OCCUPATIONAL ALARA PROGRAM GUIDE

for use with

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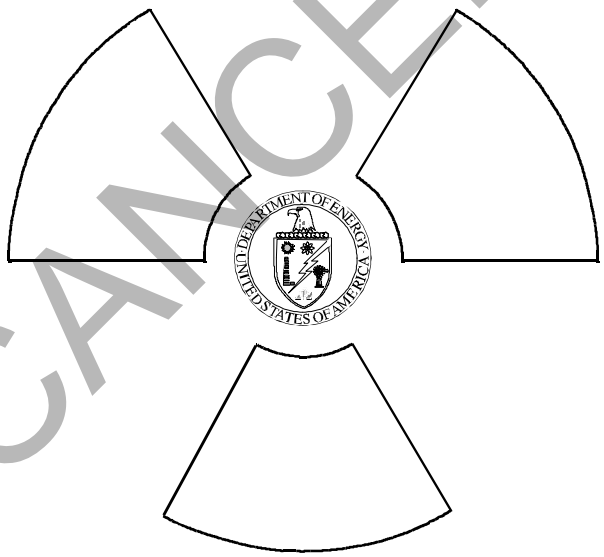

Assistant Secretary for Environment, Safety and Health

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ACRONYMS

AEC	Atomic Energy Commission
ALARA	as low as is reasonably achievable
CFR	Code of Federal Regulations
DOE	Department of Energy
EPA	Environmental Protection Agency
NCRP	National Council on Radiation Protection and Measurements
ICRP	International Commission on Radiological Protection
RCS	DOE-STD-1098-99, RADIOLOGICAL CONTROL
RPP	radiation protection program
RWP	radiological work permit
TWD	technical work document

OCCUPATIONAL ALARA PROGRAM

1. PURPOSE AND APPLICABILITY

This Guide provides an acceptable methodology for establishing and operating an occupational "as low as is reasonably achievable" (ALARA) program that will comply with U.S. Department of Energy (DOE) requirements specified in Title 10 of the Code of Federal Regulations (CFR), Part 835, Occupational Radiation Protection (DOE 1998a), hereinafter referred to as 10 CFR 835. For completeness, this Guide also references detailed guidance provided in the DOE-STD-1098-99, RADIOLOGICAL CONTROL (DOE 1999a), hereinafter referred to as the RCS.

This Guide amplifies the regulatory requirements of 10 CFR 835 and provides explanations and examples of acceptable program elements useful for conducting an effective ALARA program. The requirements of 10 CFR 835 are enforceable under the provisions of Sections 223(c) and 234A of the Atomic Energy Act of 1954, as amended (AEC 1954). This Guide is specifically intended to assist the user in fulfilling the ALARA requirements of 10 CFR 835.101(c), 103, 104, 204(d)(3), 704(b), 901(c), and Subpart K.

Except for requirements mandated by a regulation, a contract, or by administrative means, the provisions in this Guide are DOE's views on acceptable methods of program implementation and are not mandatory. Conformance with this Guide will, however, create an inference of compliance with the related regulatory requirements. Alternate methods that provide equivalent or better protection are acceptable. DOE encourages its contractors to go beyond the minimum regulatory requirements and to pursue excellence in their programs.

The word "shall" is used in this Guide to designate requirements from 10 CFR 835. Compliance with 10 CFR 835 is mandatory except to the extent an exemption has been granted pursuant to 10 CFR 820, Procedural Rules For DOE Nuclear Activities (DOE 1997a). The words "should" and "may" are used to denote optional program recommendations and allowable alternatives, respectively.

Implementation of this Guide does not constitute compliance with the ALARA requirements from DOE 5400.5, RADIATION PROTECTION OF THE PUBLIC AND THE ENVIRONMENT (DOE 1993a).

This Guide is applicable to all DOE activities that are subject to the requirements of 10 CFR 835.

2. DEFINITIONS

Terms defined in 10 CFR 835 are used in this Guide consistent with their regulatory definitions.

ALARA committee: The multi-disciplined forum that reviews and advises management on improving progress towards minimizing radiation dose and radiological releases.

ALARA design review: A systematic review to ensure that ALARA considerations are evaluated, incorporated if reasonable, and documented for the design of new facilities and modifications to existing facilities that involve the potential for exposure to ionizing radiation.

ALARA job/task/experiment review: A systematic pre- and post-job review of high-dose and potentially high-dose activities to ensure that ALARA controls are planned, evaluated, implemented where reasonable, and documented.

Dose assessment: The process of determining radiological dose and uncertainty included in the dose estimate, through the use of exposure scenarios, bioassay results, monitoring data, source term information, and pathway analysis.

Optimization methodology: A documented methodology which describes how the factors affecting a protection decision, i.e., social, technical, economic, practical, and public policy, are assigned values to compare detriment and benefits.

Radiation protection program (RPP): The documented program, approved by DOE, including, but not limited to, the plans, schedules, and other measures developed and implemented to achieve and ensure continuing compliance with 10 CFR 835 and to apply the ALARA process to occupational dose.

Radiological engineer: An individual who is responsible for providing technical support and assistance to supervisors, planners, schedulers, principal investigators, and design engineers to reduce occupational doses and the spread of radioactive materials.

Radiological work permit (RWP): The document that identifies radiological conditions, establishes worker protection and monitoring requirements, and contains specific approvals for radiological work activities. The RWP serves as an administrative process for planning and controlling radiological work and informing the worker of the radiological conditions.

Technical work document (TWD): A term used to generically identify formally approved documents that direct work, such as procedures, work packages, or job or research plans. TWDs provide radiological and ALARA controls applicable to the task.

3. DISCUSSION

In promulgating 10 CFR 835, DOE considered alternatives to reduce the risk from radiation exposure to workers that included retaining the current occupational dose limits, reducing these limits, and emphasizing efforts to maintain occupational doses as low as is reasonably achievable (ALARA). After considering public comments on this issue, DOE elected to emphasize the ALARA process to maintain occupational dose for DOE and contractor employees well below the current regulatory occupational dose limits. Adopting the ALARA process in DOE occupational radiation protection regulations also provides consistency with recommendations provided in the President's Radiation Protection Guidance to Federal Agencies For Occupational Exposure (EPA 1987), which endorsed the ALARA process.

The importance of the ALARA concept was further stressed in DOE Policy P 441.1, DOE RADIOLOGICAL HEALTH AND SAFETY POLICY (DOE 1996a), which states:

> *It is the policy of the Department of Energy to conduct its radiological operations in a manner that ensures the health and safety of all its employees, contractors, and the general public. In achieving this objective, the Department shall ensure that radiation exposures to its workers and the public and releases of radioactivity to the environment are maintained below regulatory limits and deliberate efforts are taken to further reduce exposures and releases as low as reasonably achievable. The Department is fully committed to implementing a radiological control program of the highest quality that consistently reflects this policy.*

10 CFR 835 requires formal plans and measures for maintaining occupational exposures ALARA as part of the documented radiation protection program (RPP). Measures include incorporating ALARA considerations into the design of new facilities and modifications of existing facilities, as well as activities that pose the potential for significant occupational dose. Additionally, administrative controls are addressed as measures which supplement physical design features and controls and are integrated into the work planning process. Record keeping and training requirements related to ALARA are also specified. This Guide discusses acceptable methods for implementing the ALARA process provisions in 10 CFR 835.

Due to the complex nature of many DOE activities, a combination of radiological and non-radiological hazards may be encountered. Identification of non-radiological hazards is critical to the ALARA process, because efforts to apply the ALARA process may inadvertently increase risks from non-radiological hazards. An integrated safety management approach that optimizes worker protection from all hazards should be considered in the ALARA process for a given DOE activity.

4. IMPLEMENTATION GUIDANCE

Subpart B of 10 CFR 835 requires that a DOE activity shall be conducted in compliance with an RPP approved by DOE (10 CFR 835.101(a)). The content of the RPP shall be commensurate with the nature of the activities performed and shall include formal plans and measures for applying the ALARA process to occupational exposure (10 CFR 835.101(c)). Subpart K of the rule provides requirements for design and control for maintaining radiation exposures ALARA. The primary methods used for maintaining radiation exposures ALARA in controlled areas shall be physical design features; administrative controls may be used as supplemental features and for specific activities where physical design features are impractical (10 CFR 835.1001(a) and (b)). The rule specifies objectives for design of new facilities or modifications to existing facilities (10 CFR 835.1002) and the integration of work controls during routine operations (10 CFR 835.1003). Additionally, the rule requires documentation of the actions taken to maintain occupational exposures ALARA, including actions required by the RPP, as well as facility design and control actions (10 CFR 835.704(b)).

Guidance on complying with the training requirements of 10 CFR 835.103 and 835.901 is provided in DOE G 441.1-1, MANAGEMENT AND ADMINISTRATION OF RADIATION PROTECTION PROGRAMS GUIDE (DOE 1999b), and DOE G 441.1-12, RADIATION SAFETY TRAINING GUIDE (DOE 1999c), respectively.

This section provides the basic guidelines for conducting an occupational ALARA program. It includes the requirements and guidance for developing, implementing, documenting, and providing feedback and lessons learned for improving the program to reduce individual doses to levels that are ALARA.

4.1 FORMAL PLANS AND MEASURES

The method of implementing an ALARA program is highly dependent on the complexity and magnitude of potential radiological hazards associated with the DOE activity. The elements of an effective ALARA program should be identified in a formal ALARA plan or procedure. The RPP shall clearly identify the ALARA plans and measures employed by the DOE activity (10 CFR 835.101(c)). The degree of formality and the level of detail contained in these plans and measures and other pertinent documentation should be commensurate with the magnitude of the radiological hazard associated with the DOE activity. A DOE activity with higher collective dose and/or potential for significant occupational doses should have more detailed ALARA documentation than an activity with low collective doses and/or potential for significant occupational doses. ALARA plans and measures should address the following elements at a level commensurate with the radiological hazards associated with the DOE activity:

- Policy and Management Commitment: Establish commitment and participation of all line management and all levels of the work force;

- ALARA Training: Require ALARA training for all employees, including managers involved with any aspect of radiological operations. Guidance is provided in DOE G 441.1-1, DOE G 441.1-12, and the RCS;

- Plans and Procedures: Consider administrative and engineering controls and optimization methods during work procedure development to assure that the ALARA process is fully integrated into the development of operational/experimental plans, procedures, and protocols. Document formal plans and measures for applying the ALARA process to occupational doses;

- Internal Assessments/Audits: Conduct comprehensive internal reviews, audits, and evaluations periodically and report the results to the highest levels of site management. Guidance is provided in DOE G441.1-1;

- ALARA Design Review: Ensure the integration of appropriate methods and considerations during the design phase to maintain occupational exposures ALARA during subsequent construction, modification, and operation of the equipment or facility;

- Radiological Work/Experiment Administration and Planning: Implement controls and use optimization methods to assure that occupational dose is maintained ALARA for routine and special operations or experiments; and

- Records: Maintain documents that demonstrate compliance and that the program is adequately carried out. Guidance is provided in DOE G 441.1-11, OCCUPATIONAL RADIATION PROTECTION RECORD-KEEPING AND REPORTING (DOE 1999d)

4.2 POLICY AND MANAGEMENT COMMITMENT

Management commitment to ALARA, consistent with the DOE RADIOLOGICAL HEALTH AND SAFETY POLICY, is a critical element in ensuring a successful ALARA program. This commitment should take the form of a formal, written, policy statement from a high level of corporate management, generally the senior site executive or company officer responsible for radiological activities that cause the exposures. This commitment should hold all levels of management and individual workers responsible for adhering to the company's ALARA policy. If appropriate, union leadership endorsement of the ALARA policy should be considered.

Senior site and line management should demonstrate their support of the ALARA program through direct communication, instruction, inspection of the workplace, and actions including:

- management decisions that place ALARA considerations before cost or schedule considerations (in accordance with numerical criteria; see section 4.6 below);

- encouragement of and praise for workers who identify ALARA solutions;

- support of the ALARA Committee; and

- publication of ALARA success stories.

All site personnel should be made aware of management's commitment to ALARA and radiological workers should be instructed on their responsibility to comply. Management’s ALARA commitment statement should be periodically updated and reaffirmed.

4.3 ALARA TRAINING

Specialized ALARA training should be developed for personnel who plan, prepare, schedule, estimate, or engineer jobs that have the potential for significant radiological consequences. The purpose of training these personnel in ALARA concepts and techniques is to empower them to include ALARA considerations in the early phases of job planning and engineering. This training should provide the basics of ALARA concepts and the use of ALARA related equipment such as containment devices, shielding, ventilation, and special tools. Topics such as radwaste minimization, application of decontamination efforts, and basic contingency planning for mitigation of accidental spills and releases may also be appropriate. DOE has developed specialized training material for these types of positions in DOE HDBK 1110-97, ALARA TRAINING FOR TECHNICAL SUPPORT PERSONNEL (DOE 1997b).

Discipline-specific ALARA training may be appropriate for some organizations including: operations, maintenance, engineering, production, and construction (craft workers). DOE G 441.1-1 provides additional guidance with respect to training for such individuals under 10 CFR 835.103. Mock-up training may be appropriate for craft workers and others to prepare them for unique and/or high dose jobs.

4.4 PLANS AND PROCEDURES

10 CFR 835.101(c) requires that the content of each RPP be commensurate with the nature of the activities performed and include formal plans and measures for applying the ALARA process to occupational exposures. The RPP (approved by facility management and DOE) and supporting procedures (approved by facility management) should describe the organization, responsibilities, and method of operation of the ALARA program. These documents should be reviewed and updated according to an established schedule. DOE G 441.1-1 provides additional guidance with respect to procedures required under 10 CFR 835.104.

4.5 INTERNAL ASSESSMENTS/AUDITS

10 CFR 835.102 requires that internal audits of the RPP be conducted such that all functional elements are reviewed no less frequently than every 36 months and shall include program content and implementation. The ALARA program is one of these functional elements. DOE G 441.1-1 provides detailed guidance concerning internal audits. Management's responsibilities for reviewing, auditing, and evaluating the ALARA program should be clearly documented. The occupational ALARA program should be evaluated by an individual(s) or members of the ALARA Committee with no direct responsibility for implementing the program.

4.6 ALARA DESIGN REVIEW

10 CFR 835.1001 requires that measures be taken to maintain radiation exposures in controlled areas ALARA. The primary method used shall be physical design features (e.g., confinement, ventilation, remote handling, and shielding); administrative controls shall be incorporated only as supplemental methods and for specific activities where physical design features are demonstrated to be impractical (10 CFR 835.1001). 10 CFR 835.1003 further requires that during routine operations, the combination of design features and administrative controls shall provide that the anticipated occupational dose to general employees does not exceed regulatory limits and that the ALARA process is utilized for personnel exposures to ionizing radiation. Physical design features typically include features that are used to control the work environment, such as permanent structures, systems, and controls, including shielding, filtered ventilation systems, remote controls, containment devices, and the use of designs and materials that facilitate operations, maintenance, and other activities. Physical design features may also include engineering controls (e.g., temporary shielding, confinement and ventilation systems) that are typically used to facilitate short-term or emergent operations when the installed physical design features do not provide the desired level of protection. Administrative controls typically include controls that are implemented by the individual at the work site, including written procedures, technical work documents, work authorizations, and other controls that are used to guide individual actions in a manner that will facilitate implementation of the ALARA process.

DOE has an approved set of directives concerning radiological design criteria for the design, construction, operation, and decommissioning phases of its nuclear facilities. (See list below.) The appropriate ALARA design features should be incorporated into modifications of existing facilities and/or equipment and designs of new facilities and/or equipment as early as possible in the engineering and design process. From early in the design phase and throughout the project, a radiological engineer or representative of the radiation protection staff should be assigned to the design team. This individual should ensure that reasonable radiological considerations have been integrated into the design, construction procedures, proposed operating procedures, and plans for decommissioning. Numerical criteria (e.g., dollars per rem avoided) developed for site ALARA decisions should be used to determine those design features that are reasonable. An individual with expertise in radiation

protection, preferably from the site staff, but at least familiar with the site program, should perform an independent ALARA design review that includes the following elements:

- review the general configuration of the facility and/or equipment, considering traffic patterns, location of radiation areas, location and size of changing rooms, adequacy of personnel decontamination facilities, location of fixed monitoring equipment, and adequacy of space for anticipated operations, maintenance, production, research, and decommissioning. Facility design and selection of materials shall include features that facilitate operations, maintenance, decontamination, and decommissioning (10 CFR 835.1002(d)). The RCS provides additional guidance;

- verify that radiological design criteria are consistent with applicable federal/state regulations, recognized standards and guides, and with the following DOE directives relating to radiological safety in design:

  - 10 CFR 835;

  - DOE 5400.1, GENERAL ENVIRONMENTAL PROTECTION (DOE 1990);

  - DOE 5400.5;

  - DOE 5480.22, TECHNICAL SAFETY REQUIREMENTS (DOE 1996b);

  - DOE P 441.1;

  - DOE 5480.23, NUCLEAR SAFETY ANALYSIS REPORTS (DOE 1994);

  - DOE O 420.2, SAFETY OF ACCELERATOR FACILITIES (DOE 1998b);

  - DOE 5480.30, NUCLEAR REACTOR SAFETY DESIGN CRITERIA (DOE 1993b);

  - DOE O 420.1, FACILITY SAFETY (DOE 1996b);

  - DOE 5820.2A, RADIOACTIVE WASTE MANAGEMENT (DOE 1988a); and

  - the RCS.

- verify that the design of the confinement and ventilation systems provides the required level of protection from airborne contamination, giving particular attention to patterns of air flow and to the locations of air inlets, penetrations, and exhausts. Releases of radioactive material to the workplace atmosphere should be avoided under normal operating conditions and inhalation of such materials by workers should be controlled to the extent reasonably achievable;

- evaluate and confirm the adequacy of specific control devices for reducing occupational doses, including shielding, hoods, glove boxes, containments, interlocks, barricades, shielded cells, decontamination features, and remote operations. External sources of radiation in areas of continuous occupational occupancy (2,000 hours/year) shall be maintained below an average of 0.5 millirem per hour and as far below this average as is reasonably achievable. For areas where occupancy differs from the above, external dose rates should be ALARA and should be maintained at a rate so as not to exceed 20% of the limits in 10 CFR 835.202;

- verify that the design will be able to maintain personnel entry control for each radiological area, commensurate with existing or potential radiological hazards within the area, by using one or more of the methods listed in 10 CFR 835.501.

- verify that each entrance or each access point to high and very high radiation areas will have the control features required by 10 CFR 835.502; and

- assess the adequacy of planned radiological monitoring and nuclear criticality safety instrumentation and determine whether the proposed instrumentation is appropriate for the expected types, levels, and energies of the radiation(s) to be encountered, and whether it has sufficient redundancy and capability for operation under normal operating conditions and during emergencies (10 CFR 835.401(b)).

The ALARA design review should have six discrete phases:

- dose assessment;

- review of projected radiological conditions against the trigger points or numerical criteria established by management to initiate a review (e.g., creation of a new radiation source or an increase in the dose rates from an existing source that causes increased projected facility lifetime collective dose of greater than 5,000 millirem or annual collective dose of 1,000 millirem, from operations, maintenance, production, research, inspection and decommissioning activities);

- identification of the applicable radiological design criteria;

- review of similar facilities, designs, and processes to assist in the selection of optimum ALARA design features and less costly alternatives using approved numerical criteria;

- incorporation and documentation in the design package of features to reduce the: exposure of personnel; spread of radioactive contamination; release of radioactive effluent; and creation of radioactive waste; and (6) post-construction review of effectiveness of ALARA engineering features to provide feedback to the design engineers and help refine the design process. The ALARA design review should be conducted and documented in accordance with an approved procedure and the design review package should be readily retrievable. Detailed radiological design considerations are discussed in PNL-6577, *Health Physics Good Practices for Reducing Radiation Exposures to as Low as Reasonably Achievable (ALARA)* (DOE 1988b).

Optimization Methodology

Optimization methods are required to assure that occupational exposure is maintained ALARA in developing and justifying facility designs or modifications and physical controls. Optimization methodology provides the technical and managerial basis for setting numerical criteria for ALARA decisions in the design of facilities, development or review of work processes, and the design/purchase of special tools and equipment. Selection of an appropriate cost benefit factor for reducing occupational dose involves a judgment of the relative value of dose, normally in terms of dollars per rem avoided. Additionally, guidance on optimization methodology will also provide the basis for selection of trigger points or collective dose values (facility lifetime, facility annual, job lifetime, one time job, etc.) above which an ALARA design review or job review is appropriate. Numerical criteria for ALARA decision making should include radioactive waste volume, radioactive effluent, contamination levels, and airborne radioactivity levels. Optimization methodology has led to a multi-attribute analysis technique which discussed extensively in ICRP Publication 37, *Cost-Benefit Analysis in Optimization of Radiation Protection* (ICRP 1982) and ICRP Publication 55, *Optimization and Decision-making in Radiological Protection* (ICRP 1990).

At sites with significant collective dose, formally documented optimization methodologies should be developed for ALARA reviews and decisions on implementation of ALARA efforts should be developed. This may be on a site- or facility-specific basis. Application of optimization methodologies to the ALARA process should lead to consistent, rational, repeatable decisions as to which ALARA efforts are justifiable.

The level of effort involved in documenting ALARA decisions should be commensurate with the potential dose savings to be realized. A detailed evaluation need not be made if its cost, including the cost of documentation, outweighs the potential value of the benefits. The procedure used to evaluate the "appropriateness" of dose-reduction and contamination minimization decisions should be maintained. The RCS and PNL-6577 provide additional guidance on optimization methodologies.

4.7 RADIOLOGICAL WORK/EXPERIMENT ADMINISTRATION AND PLANNING

10 CFR 835.1003 requires that during routine operations, the combination of design and administrative controls shall provide that the anticipated occupational dose to general employees shall not exceed the limits established in 10 CFR 835.202 and that the ALARA process is utilized for personnel exposures to ionizing radiation. Additionally, 10 CFR 835.501(d) requires written authorizations to control entry into and perform work within radiological areas. Often, these written authorizations take the form of radiological work permits (RWP) or technical work documents (TWD) associated with jobs or experiments. These written authorizations provide a convenient mechanism to integrate ALARA review of work tasks if the requirement for ALARA review is embodied in the written authorization. Optimization methodologies should be used to develop trigger points or numerical criteria be developed for conducting ALARA reviews of job tasks. These criteria should be incorporated into the written authorization to require ALARA review when appropriate. The RCS provides detailed guidance on the development and use of RWPs and TWDs.

4.7.1 Job/Task/Experiment Reviews

A formal ALARA job/task/experiment review should be performed for work or experiments with the potential to exceed the established numerical radiological criteria. The following are examples of criteria that should trigger a formal ALARA review.

- the estimated individual or collective dose is greater than pre-established criteria.
- the predicted concentrations of airborne radioactivity could exceed pre-established criteria (such as 100 times the DAC values provided in 10 CFR 835 Appendices A and C).
- there is potential for significant radiological exposures.
- the removable contamination in work areas could exceed pre-established criteria (such as 100 times the values provided in 10 CFR 835 Appendix D).
- individuals will enter areas where exposure rates could exceed pre-established criteria (such as 1 rem/hour).

The ALARA job/task/experiment review should encompass three discrete phases: (1) pre-job planning and dose assessment; (2) specification and implementation of ALARA controls and dose tracking; and (3) post-job review.

Pre-job Planning and Dose Assessment

Pre-job planning should include an estimate of the collective dose resulting from the job/task/experiment and a determination regarding whether the numerical criteria for an ALARA job/task/experiment review will be exceeded. The estimates may be based on actual or historical radiological monitoring results. If a review is required, the next step is to identify appropriate ALARA controls and alternatives. This should include an assessment of the cost of controls against numerical criteria.

ALARA Controls

During the work or experiment, periodic inspections should be made to ensure that ALARA controls are being implemented and are effective. Typical ALARA controls implemented in the field include: appropriate use of shielding and personal protective equipment (including respiratory protection devices), monitoring of stay times, minimization of time in radiological areas, maximizing distances from radioactive sources, and effective use of mock-up training and pre-job briefings. In addition, individual and collective doses should be tracked and periodically compared to the dose estimates to determine if intervention is needed.

Post-Job Review

Criteria should be established to trigger a formal post-job review. Examples include:

- an actual collective dose equivalent of 5 person-rem or greater,
- actual doses outside the range of ±25% of pre-job estimates,
- use of the stop radiological work authority,
- issuance of a radiological occurrence/deficiency report, or
- identification of significant lessons learned.

The post-job review should compare the actual person-hours and person-rem with the estimates, evaluate the effectiveness and cost of the ALARA controls, document the lessons learned, and make recommendations on ways to control dose and contamination for similar activities. The ALARA review should be documented and records should be readily retrievable.

In the special case of an ALARA review for a planned special exposure, additional requirements are described under 10 CFR 835.204.

4.7.2 Consideration of Non-radiological Hazards

The work planning process should integrate the consideration of other industrial, physical, and chemical hazards that an individual may encounter. Efforts to maintain worker doses ALARA should ensure that the risk of personnel injury from other hazards is not disproportionally increased. The ALARA process must consider the impact of other occupational hazards when optimizing worker radiation dose. For example:

- excessive protective clothing to control personnel contamination events may lead to heat stress situations.
- respiratory protective devices used to reduce intakes of radionulcides may impair visual acuity and communications capabilities between workers.

- protective clothing to protect workers from chemical hazards may slow work down leading to increased worker dose.

An integrated approach during the work planning process will ensure that all occupational hazards are appropriately considered and the ALARA process is followed.

4.8 RECORDS

Actions taken to maintain occupational exposures ALARA shall be documented and retained (10 CFR 835.701(a) and 835.704(b)). Administrative controls discussed in this Guide should include the systematic generation and retention of those auditable records and reports that document major actions considered or taken to attain and maintain occupational doses and the spread of radioactive contamination ALARA. The RCS and DOE G 441.1-11 provide detailed guidance on record-keeping.

All documents and legal records used to demonstrate compliance with ALARA program requirements should be reviewed and approved by supervisory or line management.

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UNITED STATES
DEPARTMENT OF ENERGY

Office of Worker Protection Programs and Hazards Management (EH-52/270CC)
19901 Germantown Road, Germantown, MD 20874-1290

Request for Changes to

OCCUPATIONAL ALARA PROGRAM GUIDE

(Use Multiple Pages as Necessary)

Page No. _____

Section No. _____

Paragraph No. _____

_____
Facility Requesting Change

_____
Contact Person

_____
Telephone Number - Fax Number

Description of Change Request:

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Suggested Specific Word Changes:

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EH-52 Technical Staff Contact:	EH-52 Guidance Program Contact:
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