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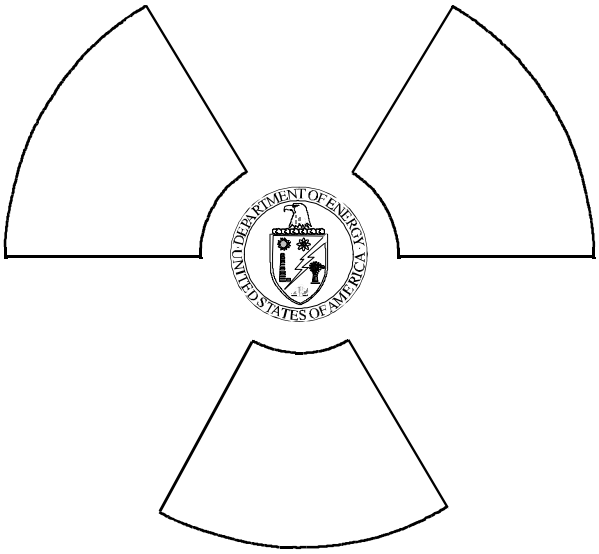
OCCUPATIONAL RADIATION PROTECTION RECORD-KEEPING AND REPORTING GUIDE

for use with

Title 10, Code of Federal Regulations, Part 835, Occupational Radiation Protection



Assistant Secretary for Environment, Safety and Health

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CONTENTS

CONTENTS PAGE

1. PURPOSE AND APPLICABILITY 1

2. DEFINITIONS 2

3. DISCUSSION 3

4. IMPLEMENTATION GUIDANCE 4

4.1 RECORDS TO BE GENERATED AND MAINTAINED 4
4.1.1 Individual Monitoring and Dose Records 4
4.1.2 Monitoring and Workplace Records 8
4.1.3 Administrative Records 11

4.2 REPORTS 15
4.2.1 Reports to Individuals 16
4.2.2 Reports of Planned Special Exposures 17

4.3 PRIVACY ACT CONSIDERATIONS 17
4.3.1 Informing Individuals 17
4.3.2 Identifying Individuals 17
4.3.3 Requesting Correction or Amendment of a Record 18
4.3.4 Responding to Requests 18
4.3.5 Accounting for Disclosures 18

4.4 RECORD-KEEPING STANDARDS 18

5. REFERENCES 19

6. ATTACHMENT 1
Request for Changes to Occupational Radiation Protection Record-Keeping
and Reporting Guide . . . . . Page 1

ACRONYMS

AEC	U.S. Atomic Energy Commission
ALARA	as low as is reasonably achievable
ANSI	American National Standards Institute
CEDE	committed effective dose equivalent
CFR	Code of Federal Regulations
CTEDE	cumulative total effective dose equivalent
DAC	derived air concentration
DOE	U.S. Department of Energy
DOE G	DOE Guide
dpm	disintegrations per minute
FOIA	Freedom of Information Act
NCRP	National Council on Radiation Protection and Measurements
NRC	U.S. Nuclear Regulatory Commission
PSE	planned special exposure
RCS	DOE-STD-1098-99, RADIOLOGICAL CONTROL
RPP	documented Radiation Protection Program
RWP	radiological work permit
TEDE	total effective dose equivalent

OCCUPATIONAL RADIATION PROTECTION RECORD-KEEPING and REPORTING

1. PURPOSE AND APPLICABILITY

This Guide provides an acceptable methodology for establishing and operating an occupational radiation protection record-keeping and reporting 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. This Guide provides cross-references to other Guides, DOE-STD-1098-99, RADIOLOGICAL CONTROL (DOE 1999a), hereinafter referred to as the RCS, DOE directives, and industry consensus standards that provide detailed guidance for implementing specific requirements in 10 CFR 835.

This Guide provides guidance with respect to implementing the provisions for record-keeping contained in Subpart H of 10 CFR 835 and the provisions for reports to individuals contained in Subpart I of 10 CFR 835. Specific regulatory citations are provided in the body of this Guide. In addition, this Guide discusses certain occupational radiation protection record-keeping and reporting requirements found in 10 CFR 1008, Records Maintained on Individuals (Privacy Act) (DOE 1980), and in the Freedom of Information Act (FOIA 1986).

This Guide amplifies the regulatory requirements of 10 CFR 835 and provides explanations and examples of the basic requirements for record-keeping and reports to individuals. 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).

Except for requirements established by a regulation, 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 are demonstrated to provide an equivalent or better level of protection are acceptable. DOE encourages its contractors to go beyond the minimum 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, respectfully.

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.

Total organ dose equivalent: For any organ or tissue assigned an internal dose during the year, the sum of the deep dose equivalent from external exposures and the committed dose equivalent to that organ or tissue from intakes received during the year.

3. DISCUSSION

This Guide provides instructions for implementing a program that will meet DOE requirements for generating, administering, and retaining occupational radiation protection records and reports. Complete and accurate radiation protection records are necessary to:

- provide information used to protect individuals from radiation exposure;
- evaluate the effectiveness of the radiation protection program;
- demonstrate compliance with regulations and requirements; and
- defend the radiation protection program against unwarranted litigation.

Supporting guidance useful in developing and implementing occupational radiation protection record-keeping programs is provided in American National Standards Institute (ANSI) Standard N13.6, *American National Standard Practice for Radiation Exposure Records Systems* (ANSI 1989) and NCRP Report No. 114, *Maintaining Radiation Protection Records* (NCRP 1992). These documents should be used in concert with this Guide and 10 CFR 835 because they may not address every DOE-specific occupational radiation protection record-keeping requirement.

The RCS provides detailed information concerning various aspects of records management programs, including record-keeping standards. The RCS provides detailed technical guidance concerning employee records, radiological control procedures, area monitoring, and instrumentation and control. The information provided by the RCS, used in conjunction with this Guide, will assure that a records management program will meet the record-keeping requirements and relevant DOE contractual requirements.

4. IMPLEMENTATION GUIDANCE

This section describes acceptable methods for conducting a functional and effective program for generating and administering occupational radiation protection program records and reports. An acceptable radiation protection records program should:

- be implemented by individuals who are knowledgeable of the record-keeping requirements. Guidance on appropriate education, training, and skills is provided in the RCS and in DOE G 441.1-1, MANAGEMENT AND ADMINISTRATION OF RADIATION PROTECTION PROGRAMS GUIDE (DOE 1999b);
- have documented policies and procedures for record and report generation and administration;
- demonstrate accuracy, completeness, timely record and report generation, and retrieval capability; and
- maintain documents that are traceable, trackable, verifiable, and retrievable, to substantiate historical events.

Unless otherwise specified, all radiation protection program records and reports shall use the special radiological units of curie, rad, roentgen, and rem, including their multiples and subunits (10 CFR 835.4). Certain radiological conditions, such as surface contamination levels, are provided in 10 CFR 835 in alternate units (e.g., dpm/100cm^2), and should be so recorded in facility records and reports. The international system of units may be used to facilitate calculations, but final records and reports should always be provided in the required units.

4.1 RECORDS TO BE GENERATED AND MAINTAINED

Required records include individual monitoring and dose, workplace monitoring and control, and administrative records

4.1.1 Individual Monitoring and Dose Records

10 CFR 835.702(a) and (b) require maintenance of monitoring results to document doses received by:

- all individuals monitored pursuant to 10 CFR 835.402;
- all individuals who received unplanned doses exceeding the monitoring threshold;
- all individuals who receive doses as a result of planned special exposures and authorized emergency exposures; and
- all individuals for whom monitoring was provided, but not required under 10 CFR 835.402.

Individual monitoring records shall be sufficient to evaluate compliance with the regulatory provisions for internal and external exposures (10 CFR 835.702(c)(1)). These records shall be sufficient to provide dose information necessary to complete mandated reports to individuals (10 CFR 835.702(c)(2)).

10 CFR 835.702(d) requires that documentation of all occupational doses received during the current year be obtained to assure individuals do not exceed the dose limits provided in 10 CFR 835.202(a). A written estimate signed by the individual may be accepted if complete records documenting previous occupational dose during the year cannot be obtained. Doses from planned special exposures conducted in accordance with 10 CFR 835.204 and emergency exposures authorized in accordance with 10 CFR 835.1302(d) are not included when determining compliance with the occupational dose limits.

Individual monitoring records identified with a specific individual shall be readily available to that individual (10 CFR 835.702(f). Individuals should be informed as to how they may access their records. Guidance on reports to individuals is provided in section 4.2 of this Guide. See section 4.3 for Privacy Act considerations.

Each individual's dose records should be identified by the following information, as appropriate:

- full name;
- social security number, employee, or other unique identifying number;
- date of birth;
- sex;
- employment status;
- occupation code;
- facility type or building number; and
- organization code.

4.1.1.1 Internal Doses

10 CFR 835.702(c)(4) requires that individual internal dose records include the committed effective dose equivalent, the committed dose equivalent to any organ or tissue of concern, and the identity of the radionuclide(s). These records should also typically include the estimated intake to facilitate future reassessments of doses (see 10 CFR 835.702(g)); however, the estimated intake is not needed for determination of dose from certain forms of some radionuclides, such as tritiated water vapor or elemental tritium. In these cases, the intake need not be recorded. In cases where intakes are detected or confirmed in a year subsequent to the year of the intake, the CEDE should be attributed to the known or assumed year of the intake, and all records and reports for that year should be amended as appropriate. Records of the results of air monitoring when used to determine individual occupational dose shall be documented and maintained (10 CFR 835.703(b).

Internal dosimetry technical basis documentation should be developed and should include technical methods, supporting evidence, and reference information used to provide the technical foundation for the internal dosimetry program. The technical basis documentation should be controlled and retained as a radiation protection program record. Guidance for determining individual internal doses is provided in DOE G 441.1-3, INTERNAL DOSIMETRY PROGRAM GUIDE (DOE 1999c).

Special radiobioassay measurements should be performed following suspected or confirmed intakes. The extent of the investigation and the number and frequency of these radiobioassays should be determined and documented on an individual, case-specific basis, taking into account the potential magnitude of the intake, the effective clearance half-time, the health of the worker, and the number of measurements needed to evaluate the internal dose.

Additional guidance for recording and reporting internal doses and related information is provided in Section 9, Records and Reporting, of DOE-STD-1121-98, INTERNAL DOSIMETRY (DOE 1998b). Record-keeping and reporting of internal doses and related information should be in accordance with this standard.

4.1.1.2 External Doses

10 CFR 835.702(c)(3) requires that individual external dose records include the effective dose equivalent, lens of the eye dose equivalent, shallow dose equivalent to the skin, and shallow dose equivalent to the extremities. When the lens of the eye is not specifically monitored, the skin dose (shallow dose equivalent) may be used to determine regulatory compliance. When the extremities are not specifically monitored, the dose to the skin of the whole body (shallow dose equivalent) may be used for determination of regulatory compliance.

When the extremities are specifically monitored, the dose should be recorded as dose equivalent to 1) hands and arms below the elbows and, separately, 2) feet and legs below the knees. When both left and right extremities are monitored, the higher dose equivalent should be recorded.

When an individual is provided multiple dosimeters, the dose measured by the highest responding dosimeter on the whole body should be assigned as the whole body dose of record (see Section 4.4.2 of DOE G 441.1-4, EXTERNAL DOSIMETRY PROGRAM GUIDE, for special considerations (DOE 1999d)). When multiple dosimeters are employed more than once during the year, dosimeter results may be summed by location and the highest total assigned as the whole body dose of record. However, sufficient records should exist to demonstrate that the dose to portions of the whole body between the monitoring locations did not exceed that recorded for the monitoring location.

When personnel dosimeter measurements are not available, a dose evaluation should be performed for that period, if necessary. These estimated or assigned doses shall be clearly recorded and maintained as such (10 CFR 835.702(a) and (g)). When area monitoring results are used to estimate individual dose, the results of surveys, measurements and calculations used to determine individual occupational exposure from external sources shall be recorded (10 CFR 835.703(b)).

A technical basis document should be developed for the external dosimetry program to provide (or provide reference to) the regulatory, scientific, and technical foundation of the program. The technical basis document should be handled as a controlled document and retained as a RPP record. Guidance to determine individual external doses is provided in DOE G 441.1-4.

The number of fixed nuclear accident dosimeter units, their locations, the effect of intervening shielding, and an analysis demonstrating these performance criteria should be documented in the technical basis document.

4.1.1.3 Summation of Internal and External Doses

10 CFR 835.702(c)(5) requires that individual dose records include the total effective dose equivalent, the total organ dose equivalent, and the cumulative total effective dose equivalent (see guidance regarding lifetime occupational dose, below). When only internal or external dose has been monitored, then the summed doses will be equivalent to the component of the dose (internal or external) that has been monitored.

4.1.1.4 Lifetime Occupational Dose

For each radiological worker monitored in accordance with 10 CFR 835.402 (i.e., the radiological worker's dose is expected to exceed the monitoring threshold(s)), efforts shall be made to obtain records of prior years' occupational dose (10 CFR 835.702(e)). Efforts to obtain such records should include at least three written requests to each prior employer. If the prior employer is non-responsive or complete records cannot be obtained for any reason, a written estimate signed by the worker may be accepted.

10 CFR 835.204(b) requires that an individual's dose from all previous planned special exposures and all doses in excess of the occupational dose limits be determined prior to requesting the individual to participate in a planned special exposure. For this situation, estimates of dose from previous planned special exposures and estimates of doses in excess of the limits are not permitted for meeting the requirements of 10 CFR 835.204(b). The records of prior years exposure required by 10 CFR 835.204(b) need only be obtained for radiological workers who are chosen and elect to participate in a planned special exposure.

On the basis of available dose records and written estimates, records of each radiological worker's cumulative total effective dose equivalent shall be maintained (10 CFR 835.702(c)(5)(iii)) and efforts should be made to determine the lifetime occupational dose of each radiological worker who is monitored in accordance with 10 CFR 835.402. The contribution to an individual's lifetime occupational dose since January 1, 1989, should be recorded as CTEDE. DOE did not require determination of CEDE prior to January 1, 1989; consequently, annual TEDE information may not be available. While determination of CEDE for internal exposures received prior to January 1, 1989, is recommended to improve the consistency of available information, such conversion may not be possible due to resource or data limitations. If conversion to CEDE is not possible or practical, all available dose and intake data should be recorded.

4.1.1.5 Non-Uniform Exposure to the Skin

Non-uniform exposures to the skin (such as from non-penetrating radiation or skin contamination) shall be recorded in the individual's dose record and included in the dose equivalent to the skin for the year if the area of skin exposure equals or exceeds 10 cm^2 and the dose equals or exceeds 1 rem (10 CFR 835.205(b)(1) and (2) and 10 CFR 835.702(b)). If the dose does not exceed 1 rem, the dose may be included in the individual's dose records as dose equivalent to the skin, but in any case, records of the dose assessment should be maintained. If the dose exceeds 1 rem and the area of the skin exposure is less than 10 cm^2, the dose shall be recorded as a special entry in the individual's dose record, but shall not be included in the dose equivalent to the skin for the year (10 CFR 835.205(b)(3)).

If the exposure to the skin is to the hands or arms below the elbows or feet and legs below the knees, the dose should be included in the shallow dose equivalent to the extremity for the year. Otherwise the dose should be recorded as shallow dose equivalent to the skin.

4.1.1.6 Planned Special Exposures (PSEs)

The dose resulting from PSEs shall not be considered in controlling future occupational dose to the individual under 10 CFR 835.202(a), but shall be included in the records and reports required by 10 CFR 835 (10 CFR 835.204(f)). Doses resulting from PSEs should be included in the determination of the individual's yearly doses, CTEDE, and lifetime dose. These doses are not considered in the individual's yearly dose when demonstrating compliance with the dose limits in 10 CFR 835.202(a). Doses resulting from PSEs should be recorded and treated separately, even if the dose does not exceed the value of the dose limits provided in 10 CFR 835.202(a).

4.1.1.7 Doses Resulting from Emergency or Accidental Exposures

The dose received from an authorized emergency exposure or unplanned exposure exceeding the applicable monitoring threshold shall be documented in each individual's dose record (10 CFR 835.702(a)). Doses resulting from accidents shall be included in assessments with compliance with the dose limits provided in 10 CFR 835 (10 CFR 835.2(a), Occupational dose). Doses resulting from authorized emergency exposures shall not be considered in assessments of compliance with the regulatory dose limits and should not be considered in controlling the affected individual's future routine occupational exposure under 10 CFR 835.202(a).

4.1.1.8 Records of Embryo/Fetus Dose and Declared Pregnant Workers

Records pertaining to the embryo/fetus and the declared pregnant worker shall include:

- the dose equivalent to the embryo/fetus of a declared pregnant worker (10 CFR 835.702(c)(6));
- the written declarations of pregnancy for the individual, including estimated conception date (10 CFR 835.704(d)); and
- the written revocations of declarations of pregnancy for the individual, if any (10 CFR 835.704(d)).

Other records that should be maintained include:

- any work restrictions imposed;
- any counseling performed;
- monitoring performed (e.g., dosimeter placement, bioassay frequency, supporting workplace monitoring); and
- records of reports provided.

Guidance for determining dose to the embryo/fetus may be found in DOE G 441.1-6, EVALUATION AND CONTROL OF RADIATION DOSE TO THE EMBRYO/FETUS GUIDE (DOE 1999e).

4.1.1.9 Individual Monitoring Program Records

Data that are necessary to support or recalculate doses at a later date shall be retained (10 CFR 835.702(g)). Records that should be retained include the following:

- the monitoring program technical basis documents and any changes;
- decisions to include or exclude program participants and the monitoring results (individual and workplace) supporting these decisions;
- calculations of dose based on workplace monitoring data, when performed;
- sample collection dates, times, volumes, analysis results, and dose assessment;
- models used (i.e., individual specific parameters versus Reference Man, etc.);
- records of program accreditation, exceptions from accreditation, or other approvals;
- contractual arrangements for contractor dosimetry services;
- program cross-checks;
- instrument capability, calibration and functional tests;
- workplace monitoring results;
- results of trend analyses;
- monitoring device issue, return, readings, dose assessment, inter-device agreement, and investigations;
- dosimeter relocation or multibadge issue, as appropriate;
- field correction factors used;
- calculations of external dose from airborne radionuclides and surface, skin, or clothing contamination; and
- employee radiological safety concerns that have been formally investigated.

4.1.1.10 Equipment Capabilities

The capabilities of radiation monitoring instruments, including individually worn dosimeters, should be documented. Recorded information should include the identification, description, and functional specifications and the results and date of any acceptance or performance tests that are performed to demonstrate equipment capabilities with regard to sensitivity, range, and energy dependence (ANSI N13.6). Additionally, records of computer program capabilities, limitations, and validation and verification should be maintained.

4.1.2 Monitoring and Workplace Records

This section applies to the records that may be required to establish the conditions under which individuals were exposed to radiation or radioactive material. These records supplement the individual dose records that are based on individual monitoring. In some cases, workplace records provide the only means for estimating individual doses. These records are also helpful in assessing the overall quality and effectiveness of the radiation protection program. The following information shall be documented and maintained:

- results of monitoring for radiation and radioactive material as required by Subparts E and L of 10 CFR 835 (except for that monitoring required by 10 CFR 835.1102(d)) (10 CFR 835.703(a));

- results of monitoring used to determine individual occupational dose from external and internal sources (10 CFR 835.703(b));

- results of monitoring for the release and control of material and equipment as required by 10 CFR 835.1101 (10 CFR 835.703(c)); and

- results of maintenance and calibration performed on instruments and equipment as required by 10 CFR 835.401(b) (10 CFR 835.703(d)).

4.1.2.1 Radiation Safety Analysis and Evaluation Records

Reports of initial evaluations and periodic re-evaluations of the long-term radiation protection aspects of a work area, equipment, or specific location should be retained. These evaluations may be used to supplement the monitoring that is required for transient conditions. The details and content of the evaluation reports depend upon the purpose of the report, the nature of the operation, and the associated potential hazards. The evaluation report should include or make reference to:

- descriptions of the facility, equipment, and nature of the operation, including modifications to any facilities, equipment or operations;

- design criteria for systems, components, and structures;

- identification of potential hazards, including the types and magnitude of the sources of radiation allowed in the facility, and the nature and magnitude of those found during the review;

- training and experience requirements for individuals employed in the operation;

- probability of occurrence and predicted consequences of hazards expressed in quantitative terms where feasible;

- physical design features and administrative controls provided to prevent or mitigate potential accidents;

- the scope of the periodic surveillance program and the radiation instrumentation required;

- the appropriate emergency actions to be taken in the event of accidents;

- operational limitations; and

- identification of the individual(s) who made the evaluation.

4.1.2.2 Work Authorizations

Written authorizations shall be required to control entry into and perform work within radiological areas (10 CFR 835.501(d)). Records of these authorizations shall be maintained (10 CFR 835.701(a)) and should include the information provided in Chapter 3, Part 2 of the RCS pertaining to preparation of RWPs. The RCS also provides guidance regarding the preparation and use of written work authorizations, such as RWPs and technical work documents. The supporting records, such as monitoring records used to prepare work authorizations, should be linked so that reference can be made to the data when required.

4.1.2.3 Area and Material/Equipment Monitoring Records

Results of area and material/equipment monitoring activities should be recorded on appropriate standard forms (to the extent practicable) and include the following common elements:

- date, time, and purpose of the monitoring activity;

- general and specific location monitored;
- name and signature of the individual performing the monitoring;
- pertinent information needed to interpret the monitoring results;
- reference to a specific work authorization if the monitoring is performed to support the authorization;
- model and serial number of the instrument (locations of fixed instruments may be used as identifiers where the model and serial numbers are not available).

The value of some types of area monitoring is enhanced by the use of sketches of building, room, or equipment layouts to clearly define the areas monitored and results observed. Monitoring of certain items however, may be adequately documented by simply describing the item and its radiological status. Additional records that should be maintained include:

- the technical bases for assumptions on which the monitoring program is based, including radionuclide inventories, system functions, specific activities involving radioactive materials, and air flow studies;
- records of alarms and alarm responses;
- placement of fixed dosimeters and nuclear accident dosimeters;
- results of samples, including location, time, occupancy, volume, radionuclides, concentrations, counting equipment data, etc.;
- field analysis and follow-up analysis results;
- pertinent facility conditions when monitoring is performed;
- corrective actions resulting from performance of monitoring;
- personnel and area decontamination records; and
- times and dates as necessary to assess compliance with time sensitive requirements, such as receipt of material from radioactive material transportation.

Many facilities employ area monitoring instrumentation that records on charts the radiation levels in work locations. The record on the chart should include, or be directly linked to, the information described in ANSI N13.6.

See Chapter 7, Part 5 of the RCS for additional guidance concerning radiation and contamination monitoring records.

4.1.2.4 Airborne Radioactivity Monitoring Records

In addition to the guidance provided in section 4.1.2.3, the results of monitoring for airborne radioactivity shall be documented and maintained (10 CFR 835.703(a)) and should include:

- measured airborne radioactivity concentrations in general areas and breathing zones;
- supporting parameters, including collection efficiency, flow rate, duration of sampling, correction factors, and filter medium;
- individual DAC-hour calculations, when performed; and

- linkage of air sample results to individuals in the area, when monitoring results will be used for individual dose assessment or exposure control.

Airborne monitoring program records should include:

- the technical basis for alarm set points for real-time monitors;
- the technical basis for air sampling and real-time air monitoring equipment selection, placement, and operation; and
- any adjustments to DACs.

When air monitors with chart recorders are used, the following additional information should be recorded on the chart or be directly linked to the chart:

- type of instrument, e.g., fixed filter or moving tape;
- tape and chart speed;
- identity of scale or range of operation; and
- specific calibration and relationship between the chart divisions and the concentration of the airborne radioactive material depending on the tape speed and flow rate of a moving filter unit or the flow rate of a fixed filter unit.

4.1.2.5 Records of Releases of Materials and Equipment from Radiological Areas

Records of monitoring for the release and control of material and equipment as required by 10 CFR 835.1101 shall be documented and maintained (10 CFR 835.703(c)). These records should contain the following:

- description of the material or equipment;
- date on which the material or equipment was monitored;
- type and identification number of the survey instrument used;
- results of the monitoring; and
- identification of the individual(s) who performed the monitoring.

When the material to be released consists of many small or identical items, then the material may be described in a general manner (e.g., “box of tools” or “pallet of lumber”). Large or unique items should be specifically identified by identification number, if available.

4.1.3 Administrative Records

This section applies to the administrative records that describe various elements of the radiation protection program.

The following records shall be maintained:

- training records, as necessary, to demonstrate compliance with 10 CFR 835.901 (10 CFR 835.704(a)).

- actions taken to maintain occupational exposures ALARA, including the actions required for this purpose by 10 CFR 835.101, as well as facility design and control actions required by Subpart K of 10 CFR 835 (10 CFR 835.704(b));

- results of internal audits and other reviews of program content and implementation (10 CFR 835.704(c)); and

- changes in equipment, techniques, and procedures used for monitoring (10 CFR 835.704(e)).

4.1.3.1 Radiation Safety Training

Records of radiation safety training are essential to show that each individual received appropriate training. Records shall be maintained, as necessary, to demonstrate compliance with 10 CFR 835.901 (10 CFR 835.704(a)). These records should include documentation of on-the-job and practical factor training as well as formal classroom training. Training and qualifications records should be readily available to first-line supervision and management to aid in work assignment.

Course-related items, including all revisions and dates used, that should be retained include the following:

- the course title and outline or syllabus;

- copies of handouts distributed to the attendees;

- instructor's manuals and lesson plans;

- copies or transcriptions of any video and audio training that is provided;

- attendance sheets showing dates, attendees' names and signatures, and names of instructors;

- documentation of job-specific training, such as radiological procedures, RWP procedure, and special training requirements, pre-job briefings, and mockup training;

- documentation of exceptions to training requirements and extension of qualifications;

- on-the-job training records;

- records demonstrating the practical application of a learned skill;

- copies of any certificates issued;

- the basis for decisions to alter standard course content for specific candidates due to prior education, experience, escort provided, etc.;

- program accreditation records;

- effectiveness evaluations and actions in response;

- training/briefings provided between full training cycles;

- basis for site/facility-specific materials;

- individual tests, or if a test bank is used, the test series number and a copy of the bank and the series code; and

- confirmation of satisfactory completion of training.

If training or qualifications received at other locations are to be accepted in place of training, documentation should be obtained and placed in the individuals' training records. Additional guidance on training records may be found in the RCS.

4.1.3.2 ALARA Records

Actions taken to maintain occupational exposures ALARA, including actions required by the RPP, as well as facility design and control actions shall be documented (10 CFR 835.704(b)). As discussed in DOE G 441.1-2, OCCUPATIONAL ALARA PROGRAM GUIDE (DOE 1999f), this documentation includes formal plans and measures for applying the ALARA process to occupational doses. This documentation should include the following, to the extent the programmatic elements are used in the specific program:

- the ALARA committee charter, membership, and meeting minutes;
- implementation of administrative control levels;
- forms demonstrating approval to exceed administrative control levels;
- dose, intake, and personnel contamination investigation forms;
- radiological performance goals, status, and annual performance records;
- pre-job briefing, with content and attendance;
- post-job reviews, with dose estimates, and actual doses received;
- collective doses received by the total facility, by specific work groups, and for specific high dose jobs;
- annual or special ALARA reports, e.g., dose/dosimetry trend data;
- records of ALARA design review;
- results of optimization analysis;
- work planning, including procedures and technical work documents;
- work authorizations, including RWPs;
- records of ALARA job/experiment review; and
- ALARA training records.

Formally documented optimization methodologies should be developed for ALARA reviews and decisions on implementation of ALARA efforts. The degree of formality should be commensurate with the radioactive material contamination and dose potential. Chapter 1 of the RCS provides additional guidance on the degree of program formality.

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

4.1.3.3 Facility Design

Records necessary to evaluate compliance with the design and control requirements of Subpart K of 10 CFR 835 shall be maintained (10 CFR 835.701(a)). These records should include the following:

- the design and control considerations documenting the rationale for selecting physical controls or administrative controls, when necessary;
- the design criteria used and technical basis for these criteria;
- the optimization methodology employed for facility design and modifications;
- the technical basis for design objectives;
- the results of design reviews, including features that facilitate operations, maintenance, decontamination, and decommissioning; and
- the technical basis for workplace controls used.

4.1.3.4 Entry and Access Control Records

Records necessary to evaluate compliance with 10 CFR 835.501 shall be maintained (10 CFR 835.701(a)). These records should include the following:

- system/device design, test criteria, and data;
- system/device failure and corrective actions;
- assessments of adequacy for actual and design conditions; and
- administrative controls used in lieu of physical controls.

4.1.3.5 Sealed Radioactive Sources

Records shall be maintained as necessary to evaluate compliance with the requirements of 10 CFR 835.1201 and 10 CFR 835.1202 for sealed radioactive source control, inventory, and source leak tests (10 CFR 835.704(f)).

Records that should be maintained include:

- source acquisition, monitoring, leak tests, inventories, loss;
- storage and use locations;
- investigations conducted; and
- exceptions taken due to source inaccessibility or sources taken out of service.

See Chapter 7, Part 5 of the RCS for additional guidance concerning sealed radioactive source leak tests and inventories records.

4.1.3.6 Radiation Protection Program, Policies and Procedures

Documentation supplementing the approved RPP should be developed and maintained to demonstrate that an RPP can be effectively managed and administered to achieve compliance with 10 CFR 835. This documentation should include a site radiological control manual, detailed implementing procedures, appropriate management policy statements, and technical basis documentation. While this documentation need not be part of the RPP, it should be clearly linked to the compliance commitments contained in the RPP. Records of this documentation should be recorded in accordance with ANSI N13.6. All policies and procedures should have effective dates.

Documentation of changes made to the RPP without prior DOE approval should include the rationale applied to such changes and should be retained for future reference and demonstration of compliance.

Programmatic documentation should be developed to document the organizational and administrative aspects of the RPP.

Records shall be maintained, as necessary, to demonstrate that individuals who are responsible for the development and implementation of measures necessary to ensure compliance with 10 CFR 835 have the appropriate education training, and skills to execute these responsibilities (10 CFR 835.103 and 701(a)). These records should include records of the training provided in accordance with Chapter 6, Parts 4 and 5 of the RCS.

If the provisions of 10 CFR 835.3(e) are exercised, documentation of the schedule deviation should be developed and include a discussion of the specific activity involved and the reason for the schedule deviation.

Revisions to procedures, policies, or methods of evaluation used for monitoring shall be documented (10 CFR 835.704(e)). The original document and all approved revisions of subject documents should also be retained.

4.1.3.7 Audits and Programmatic Reviews

Assessments of radiation protection programs by external agencies and internal groups are valuable in determining the adequacy of the program. Records shall be maintained to document the results of internal audits and other reviews of program content and implementation (10 CFR 835.704(c)). These records should include records of corrective actions and audit procedures.

4.1.3.8 Posting and Labeling

Records necessary to evaluate compliance with the posting and labeling requirements of 10 CFR 835 shall be maintained (10 CFR 835.701(a)). These records should include the following:

- documentation of area postings on area monitoring records. These records need not show the placement of each sign, but should be adequate to demonstrate that areas are posted consistent with the radiological conditions recorded on the monitoring record;
- variance from facility design parameters;
- documentation of compensatory measures implemented to obviate the need for posting; and
- long term changes in postings.

4.1.3.9 Calibration, Functional Tests, and Maintenance Records

Calibration and maintenance procedures, criteria, and schedules for dosimeters and radiation protection instruments are important to demonstrate their dependability, reliability, and accuracy. The results of maintenance and calibration performed on instruments and equipment used for monitoring shall be recorded (10 CFR 835.703(d)). These records should include equipment, sources, and fields used, results of initial (as found) tests and post-adjustment tests, and corrective actions taken for instruments found to be out of calibration or inoperable.

The calibration laboratory should maintain the following sets of documentation: (1) the laboratory protocol; (2) the laboratory records; and (3) the calibration records. Historical records should be maintained to detail any changes or revisions in procedures or protocols.

The performance of functional tests during use of portable monitoring instruments in the field should be appropriately documented. This may be as simple as a check-list on the survey sheet.

4.2 REPORTS

Many reports are prepared for a variety of purposes by the radiation protection program. This section describes the reports required by the previously cited references.

4.2.1 Reports to Individuals

Each individual monitored in accordance with 10 CFR 835.402 shall be provided an annual report of his/her dose (10 CFR 835.801(c)). The report shall include, at a minimum the data required under 10 CFR 835.702(c), and the following additional information (10 CFR 835.801(a) & (c)):

-- The DOE site or facility name;

-- the name of the individual, and;

-- the individual's social security number, employee number, or other unique identification number.

Individuals who were not monitored in accordance with 10 CFR 835.402 but who were determined to have received an occupational dose in excess of any of the monitoring thresholds of 10 CFR 835.402 should also be provided an annual report of his/her dose. This report should also include the information discussed above.

DOE O 231.1, ENVIRONMENT, SAFETY AND HEALTH REPORTING (DOE 1996), and DOE M 231.1-1, ENVIRONMENT, SAFETY AND HEALTH REPORTING MANUAL (DOE 1995), provide additional detailed information with respect to occupational dose reporting requirements.

Whenever a report concerning radiation protection matters is written about or to an individual, a copy of the report should be placed in the individual's dose records.

4.2.1.1 Records Requested by Monitored Individuals

Detailed information on any individual's exposure shall be made available to him/her upon request, consistent with the provisions of the Privacy Act (PA 1974) (10 CFR 835.801(d)). See section 4.3 of this Guide for Privacy Act considerations. Requests for exposure information should be answered as soon as possible. At a minimum, the response should provide the information supplied on the termination report. Other data that may be requested by the individual should be supplied if available.

4.2.1.2 Termination Dose Reports

10 CFR 835.801(b) requires that a termination dose report be provided only upon request of the individual terminating employment. This requirement includes visiting scientists and transient workers, such as technicians, and specialists who perform work at a facility and then leave to work elsewhere. The termination dose report shall be provided to the requesting individual as soon as data are available, but not later than 90 days after termination. 10 CFR 835.801(b) also requires that a written estimate of the radiation dose received by the individual based on available information shall be provided at the time of termination, if requested. The provisions for termination dose reports and written estimates only apply if the individual requests this information on or before the individual's last day of employment. If the request is made after the termination date, then the request should be handled in accordance with 10 CFR 801(d). When a termination dose report is provided to an individual, then an annual report to that individual, under 10 CFR 801(c), is not necessary.

4.2.1.3 Reports to DOE

Reports identifying a specific individual and his or her exposure data may be required to be sent to DOE. These reports include occurrences reported under DOE O 232.1A, OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS INFORMATION (DOE 1997b), of exposure of an individual to radiation and/or radioactive material, or planned special exposures conducted in accordance with 10 CFR 835.204(e). Under 10 CFR 835.801(e), each individual specifically identified in such reports shall be provided a report on his or her exposure data included in the report to DOE at a time not later than the transmittal to DOE. A separate report should be provided to each affected individual discussing the nature and content of the report to DOE and his or her exposure data contained in the DOE report. Alternatively, a copy of the report sent to DOE may be sent to each affected individual to satisfy this requirement. Privacy Act restrictions shall be considered since DOE report may contain personal information concerning other affected individuals.

4.2.2 Reports of Planned Special Exposures

A written report of the conduct of a planned special exposure shall be submitted to the cognizant Program Office and the Secretarial Officer responsible for environment, safety and health matters (currently the Assistant Secretary for Environment, Safety and Health) within 30 days after the exposure (10 CFR 835.204(e)). This written report is required even though the actual doses may not have exceeded the values of occupational dose limits established in 10 CFR 835.202.

The report should address, but need not be limited to:

- a description of the circumstances requiring the use of a planned special exposure;
- identification of involved individuals, including exposed individuals, supervisors, approving management and DOE personnel;
- date(s) on which the exposure(s) occurred;
- estimated and actual personnel doses, including doses received by affected individuals before the planned special exposure; and
- records of ALARA plans, work authorizations, briefings, approvals, and other work documentation.

4.3 PRIVACY ACT CONSIDERATIONS

Any system of records that retrieves information concerning individuals by personal identifiers, such as name, any identifying numbers (e.g., Social Security Number or payroll number), symbol, or other identifying particulars assigned to the individual, is subject to the Privacy Act. The principal records that would apply in this guide are the individual radiation dose records. Other records, such as program records, are subject to the FOIA.

No information on an individual should be revealed to anyone other than the individual, DOE, or DOE contractor personnel who have a need to know without prior written consent of the individual, unless authorized by the Privacy Act or for routine uses as published periodically in the Federal Register. Records of deceased individuals are not covered by the Privacy Act, but are subject to the FOIA.

The following subsections discuss applicable parts of the Privacy Act as implemented by DOE through 10 CFR 1008 (DOE 1980).

4.3.1 Informing Individuals

Individuals about whom information will be collected should be informed of the authority for collection of the information, the principal and routine uses of the information, and the effects of not furnishing the information.

4.3.2 Identifying Individuals

10 CFR 1008.4 sets forth procedures for identifying the individual making a request for access to, information from, or amendment of his/her records. Identification of the individual should be established by one of the following three methods:

- if making a request by mail, a photocopy of two identifying documents bearing his/her name and signature must be submitted, one of which should bear his/her current home or business address and date of birth;
- if appearing in person, the individual must present either one identifying document bearing his/her photograph and signature or two identifying documents bearing his/her name and signature, one of which should bear his/her birth date and current home or business address; or

- the individual can provide other proof of identity that the Privacy Act Officer deems satisfactory in the particular circumstances.

4.3.3 Requesting Correction or Amendment of a Record

If an individual requests a correction or amendment to his/her records, the record shall be changed or the Privacy Act Officer shall inform the requestor that the change has been denied. The denial should include the record system manager's name and title, the reasons for the denial, notification of the individual's right to appeal the denial, and the individual's right to submit a statement of disagreement.

4.3.4 Responding to Requests

Every reasonable effort should be made to respond with the requested material, correction, or amendment within 10 days. Response should be made within 20 days unless unusual circumstances prevail. If a response cannot be made within 10 days, an interim response should be made providing information on the status of the request and an estimate of when the response will be made.

4.3.5 Accounting for Disclosures

An accounting of all disclosures of information, except those to DOE and DOE contractor personnel with a need to know or those required by the FOIA, should be maintained as prescribed by the Privacy Act.

4.4 RECORD-KEEPING STANDARDS

Records shall be retained until final disposition is authorized by DOE (10 CFR 835.701(b)). Individual dose records shall be transferred to DOE upon cessation of activities at the site that could cause exposure to individuals (10 CFR 835.702(h)).

General standards for maintenance and retention of radiation protection records, including media, media conversion, corrections, retention, and retrievability, are provided in the RCS.

5. REFERENCES

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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 RADIATION PROTECTION RECORD-KEEPING AND REPORTING GUIDE

(Use multiple pages as necessary.)

Page No. _____	Facility Requesting Change:_____
Section No. _____	Contact Person:_____
Paragraph No. _____	Telephone No./Fax No.:_____

Description of Change Request:

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Suggested Specific Word Changes:

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