

Course Title: Radiological Control Technician
Module Title: Radiological Documentation
Module Number: 2.01

Objectives:

- ☞ 2.01.01 List the types of records/reports that the Radiological Control (RadCon) organization is responsible for maintaining.

- ☞ 2.01.02 Describe the types of records and reports used at your facility by the Radiological Control organization, to include but should not be limited to:
 - a. Radiological Work Permits
 - b. Radiological Survey Reports (RSR's)
 - c. ICAREs
 - d. RadCon Operations Logbook
 - e. Exposure Reports

- ☞ 2.01.03 Explain the requirements for the records management system, such as QC, auditability/retrievability, management information at your site.

References:

1. 10 CFR Part 835 (1998) Occupational Radiation Protection
2. PRD-183, ICP Radiological Control Manual, Chapter 7
3. MCP-7, Radiological Work Permit
4. MCP-9, Maintaining the Radiological Control Logbook
5. MCP-85, Training Records Administration
6. MCP-135, Document Management
7. MCP-139, Radiological Surveys
8. MCP-557, Managing Records
9. MCP-598, Corrective Action System
10. MCP-2547, Identification, Reporting, and Resolution of Price Anderson Non-compliances

INTRODUCTION

10 CFR 835 establishes radiation protection standards, limits, and program requirements for protecting individuals from ionizing radiation resulting from the conduct of DOE activities. It is important to maintain the proper documentation to ensure that the DOE standards and requirements are being met. An RCT plays a vital role in supporting these requirements through data collection, evaluation, and proper documentation. This data must be readily retrievable as a reference and as a guide to other facility workers.

PURPOSE AND REQUIREMENTS

Radiological control records are needed to demonstrate the effectiveness of the overall Radiation Protection program at DOE facilities. The records are used to document radiological safety afforded to personnel on-site. Radiological control records are valuable tools in work planning, evaluating past trends, and guiding future performance goals. These records may become the basis for public disclosures, legal proceedings, medical assessment and audits to show compliance with company, state or federal requirements. Because of this, it is important that these records be of high quality, readily retrievable, and managed for the prescribed retention period. It is suggested that these records be cross-referenced, when applicable, to aid in their retrieval.

☞ *2.01.01 List the types of records/reports that the Radiological Control organization is responsible for maintaining.*

TYPES OF RADIOLOGICAL RECORDS

Various types of records are included in the radiological records management program. These records fall into the following categories:

Employment History Records

Records detailing an employee's previous and on-going radiological work assignments, yearly radiation doses at DOE and non-DOE facilities must be maintained. Where practical, the relation between the radiation dose and job function must be preserved for trend analyses and future worker health studies.

Personnel Radiological Records

Occupational Radiation Dose Records must be maintained for all contractor, subcontractor, and Federal employees who are part of the personnel dosimetry program. These records include results of personnel extremity, skin, eye and whole body external dose measurements. The records also contain internal dose information, including in vivo measurements, urine, fecal and other specimen analysis and dose assessments. A complete record of radiological incidents and occurrences involving personnel radiation dose must also be retained. The investigation and counseling of personnel radiological concerns must also be documented and maintained within the radiological control record management program.

Medical Records

Reports of periodic medical examinations and evaluations, respirator fit-testing results and records of medical treatment performed in support of the radiological control program should be maintained.

Radiological Training and Qualification Records

Records of training and qualification in radiological control are permanently maintained to demonstrate that a person received appropriate information to perform the work assignment in a safe manner. Qualification standard records are retained for on-the-job, practical and formal classroom training. Training and qualification records are available to first-line supervision and management to aid in making work assignments. Included in the maintained training records are quizzes, tests, and acknowledgements of training, with the date and signature of the person trained. Training records are kept in accordance with MCP 85, "Training Records Management."

Instrumentation and Calibration Records

Records of calibration, modification or maintenance, and periodic operational checks of fixed, portable, and laboratory radiation measuring equipment must be maintained. These records include frequencies, methods, and dates of calibration, maintenance, and operational checks, and traceability of calibration sources. Records of additional tests and checks of instrumentation used in conjunction with a suspected overexposure, questionable indication, or unusual occurrence are also retained.

Radiological Control Procedures

Facilities are required to maintain radiological control procedures, policies, ALARA records, work procedures, ICARE issues, Radiological Work Permits, and supporting data as part of their radiological control record management program. Specific requirements for each of these documents can be found in PRD-183, ICP Radiological Control Manual. The ICARE issue system is implemented by MCP-598, Corrective Action System.

ICP Specific Information

CWI RADIOLOGICAL RECORDS

Most CWI radiological records are either forms or procedures.

CWI Radiological Forms

Radiological forms are filed in section 441 "Radiation Protection" of the CWI electronic document management system (EDMS). The following list from this section shows some typical radiological forms.

Sample RadCon Forms

- 441.02 PERSONNEL SKIN/CLOTHING CONTAMINATION RECORD
- 441.10 ALARA REVIEW
- 441.14 INSTRUMENT PERFORMANCE CHECK SHEET
- 441.18 INSTRUMENT PERFORMANCE CHECK-STICKER
- 441.19 FRISKER PERFORMANCE CHECK-STICKER
- 441.21 RADIATION GENERATING DEVICE INSPECTION
- 441.36 INSTRUMENT FIELD CHECK RECORD-STICKER
- 441.37 RADIOLOGICAL CONTROL SHEET
- 441.38 CONTAINMENT APPROVED (TAG)
- 441.45 RADIOLOGICAL SURVEY REPORT
- 441.48 AIRBORNE SURVEY RESULTS
- 441.49 ICP RADIATION WORK PERMIT
- 441.56 RADCON DAILY LOG SHEET
- 441.59 RWP Log
- 441.87 SEALED RADIOACTIVE SOURCE LEAK TEST
- 441.99 LHRA AND VHRA KEY INDEX SHEET

These forms are accessible from the ICP intranet using EDMS. If you are unsure on how to access EDMS on the intranet, ask your instructor.

CWI Radiological Procedures

CWI radiological control policies are specified by procedures and are contained in the following company-wide manuals.

- PRD-183 – Radiological Control Manual
- Companywide Manual 15A - Radiation Protection ICP Radiological Control
- Companywide Manual 15B - Radiation Protection Procedures
- Companywide Manual 15C - Radiological Control Procedures
- Companywide Manual 15D - Radiological Instrument Calibration Procedures

These procedures are accessible from the intranet using the document search engine, “EDMS”. Once on the ICP site intranet, <http://icphome.icp.gov>,

- Click on the “EDMS” icon
- In the “Docu-Search” window in upper left of page, type in the document/procedure you are searching for.
- From the list provided, select the “ICP” related procedure choice.

Procedure Use

Use controlled copies of manuals and procedures. Controlled copies can be found on EDMS. If an EDMS version is printed, verify it to be the most current ICP revision prior to use by comparing it to a controlled copy; otherwise, treat it as an uncontrolled or information only copy.

If a procedure is deficient or cannot be followed as written:

1. Stop the operation.
2. Notify the cognizant manager or supervisor.
3. Initiate a procedure change or revision.

Procedure Use Types

Use and follow the procedures as written for the specific procedure use type. MCP-135 “Document Management” addresses the use type for procedures used here at the ICP. Most radiological control procedures are use type 3.

Use Type 1 Procedures

Those procedures for which failure to comply in a step-by-step manner could result in a significant health or safety risk to an employee or the public, or an environmental risk, or could have a significant adverse impact on facility operations. Type 1 Procedures:

- Are issued each time they are performed.
- Contain steps that are signed off or initialed as they are performed.
- Are in the physical possession of the user when the procedure is being performed.
- Are followed in a step-by-step manner.
- Steps are performed in sequence unless otherwise specified in the procedure.
- Verified to be the current revision when issued.

Use Type 2 Procedures

Those procedures for which failure to comply in a step-by-step manner could result in a health or safety risk to an employee or the public, or an environmental risk, or could have a significant adverse impact on facility operations. Type 2 Procedures:

- Do not contain steps that need to be signed off/initialed as they are performed.
- Are available in the immediate area where the procedure is being performed.
- Are referenced as necessary to correctly perform the procedure.
- Are followed in a step-by-step manner.
- Steps are performed in sequence unless otherwise specified in the procedure.
- Verified to be the current revision prior to use.

Use Type 3 Procedures

Those procedures for which failure to comply in a step-by-step manner would result in little or no risk to the employee, the public or the environment, or have little or no adverse impact on facility operations. Use Type 3 procedures typically provide administrative direction and define the activities necessary to carry out programs. Procedures established as Use Type 3 must be accessible to the performer and consulted as necessary to comply with procedure instructions. Type 3 Procedures:

- Are administrative in nature.
- Are readily available to personnel.
- Are consulted by personnel as necessary to comply with the procedure requirements.

☞ 2.01.02 Describe the types of records and reports used at your facility by the Radiological Control organization, to include but should not be limited to:

- a. Radiological Work Permits
- b. Radiological Survey Reports (RSR's)
- c. ICAREs
- d. RadCon Operations Logbook
- e. Exposure Reports

RADIOLOGICAL EXPOSURE REPORTING

All individuals that are monitored by a personnel dosimetry program shall be provided an annual report of their radiation exposure. A person may also receive a current radiation dose record upon special request. If requested, terminating employees will be given an exposure report within 90 days of their last day of employment summarizing their radiation dose for the total period of employment at the appropriate facility.

ICP Specific Information

Radiological Work Permits

The purpose of a radiological work permit is to establish radiological controls for the intended work activities, to inform workers of area radiological conditions and entry requirements, and to relate worker exposure to these work activities.

Radiological Survey Reports

Survey results are documented on a radiological survey report, RSR. The RadCon organization maintains a number of different survey reports for different types of surveys. In general survey reports will contain the following information.

- Date, time, and purpose of the survey.
- General and specific location of the survey.
- Name and signature of the surveyor.

- Pertinent information required to interpret the survey results.
- Reference to a specific radiological work permit if the survey is performed to support the permit.
- Instrument model and serial number, (the Health Physics Instrument Laboratory bar code, when on an instrument, should be used as the serial number).
- Results of the measurements of area dose rates with a minimum reporting level of 10% of the lowest scale graduation or as specified on the calibration sticker.
- Locations of hot spots and other radiological hazards.

ICARE reports

Any employee may report a radiological deficiency through the company ICARE system. The purpose of ICARE is to provide a formal means whereby any company program deficiency may be reported, analyzed, and corrected. Details for reporting a deficiency through the ICARE system are contained in MCP-598 "Corrective Action System" and MCP-2547 "Identification, Reporting, and Resolution of Price Anderson Non-Compliances."

RadCon Operations Logbook

Written documentation of the Radiological Controls organization activities shall be maintained. Daily operations shall be entered in the RadCon electronic log book. Items entered shall include;

- Routine radiological surveys performed of areas and equipment.
- Job specific radiation and contamination surveys performed.
- Activities attended, i.e. POD meetings, ALARA meetings, job planning meetings where radiological safety issues are discussed formally.
- Release of radiological shipments and survey results.
- Facility specific safety
- Records of pre-job briefings and post-job evaluations.
- Records of temporary shielding and portable ventilation installation and removal.

Exposure Reporting

Individuals who are monitored by a personnel dosimetry program are provided with an annual Personnel Exposure report of their dose received including internal exposure, skin contamination exposure, and any external exposure. Upon request, an individual shall be provided detailed information concerning his or her exposure, consistent with the Privacy Act.

☞ 2.01.03 *Explain the requirements for the records management system, such as QC, auditability/retrievability, management information at your facility.*

RADIOLOGICAL RECORD KEEPING STANDARDS

Record keeping standards have been set by the Department of Energy, (DOE). In addition to the requirement of being accurate and legible, all radiological records must include the following:

- identification of the facility, specific location, function, and process

- signature of the preparer and date
- legible entries in black ink
- corrections identified by a single line-out, initialed, and dated
- supervisory signature to indicate review and proper completion of the forms.

Each radiological control organization should maintain a file of names, signatures and initials for future identification of the person who signed or initialed a record. In addition, radiological control records should not include:

- records that are corrected using opaque substances
- records that contain shorthand or other nonstandardized terms.

RECORDS MANAGEMENT

All records are required to be stored in a manner that ensures that they can be retrieved, in addition to being able to maintain their integrity and security. Once a record has been created, reviewed, and signed by appropriate supervision, the record should be considered complete and must not be modified. Subsequent errors identified in a completed record should be corrected by creating a supplemental record that includes traceability for the correction. Radiological Control records should be protected from temperature extremes, moisture, infestation, electromagnetic fields, excessive light, stacking, theft, and vandalism. Protective measures should include vaults, file rooms with fixed fire suppression, fire-rated cabinets, duplicate storage, or a combination of these.

RADIOLOGICAL RECORDS MANAGEMENT PROGRAM

The ICP has a radiological records management program to ensure that auditable records and reports are controlled through the stages of creation, distribution, use, arrangement, storage, retrieval, media conversion and disposition. The radiological records management program should include the following:

- a. Radiological Policy Statements
- b. Radiological Control Procedures
- c. Individual Radiological Doses
- d. Internal and External Dosimetry Policies and Procedures (including Bases Documents)
- e. Personnel Training (course records and individual records)
- f. ALARA Records
- g. Radiological Instrumentation Test, Repair and Calibration Records
- h. Radiological Surveys
- i. Area Monitoring Dosimetry Results
- j. Radiological Work Permits
- k. Radiological Performance Indicators and Assessments
- l. Radiological Safety Analysis and Evaluation Reports
- m. Quality Assurance Records
- n. Radiological Incident and Occurrence Reports (and Critique Reports, if applicable)

- o. Accountability records for sealed radioactive sources
- p. Records for release of material
- q. Reports of loss of radioactive material.

ICP Specific Information

CWI RADIOLOGICAL CONTROL RECORDS MANAGEMENT

Records include all documents, regardless of physical form or characteristics, made by the company as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the company. Radiological records include all those documents used to establish the ICP's radiation protection program. Radiological records are used to document compliance with regulatory requirements.

MCP-557 "Managing Records" specifies record-keeping standards for the company. All records, including radiological records, must be retained. Non-records do not need to be retained. Examples of non-records include such things as blank forms, CAM strip charts, and printed copies of procedures (the record copy of the procedure is maintained by EDMS).

Quality Assurance (QA) Records – Most radiological records are also classified as quality assurance (QA) records. QA records are completed documents that furnish evidence that items or work comply with key requirements. The controls for maintaining QA records are more stringent than for non-QA records.

Epidemiological (EPI) Records – Many radiological records are also classified as epidemiological (EPI) records. EPI records document the hazards that an employee may have been exposed to. As such, they are important to maintain for legal purposes.

Privacy Act – Radiological records may include information (such as an individual's dose history) protected by the Privacy Act. Information controlled by the Privacy Act should only be disseminated for company business. MCP-87 "Responding to Freedom of Information Act and Privacy Act Requests" specifies control of Privacy Act information.

Summary

It is very important that radiological documentation be completed promptly and correctly. If records and reports are not consistently complete, accurate, and legible, the integrity of the radiological protection program is jeopardized. Backtracking to finish incomplete documents, correct inaccurate documents, and to regenerate illegible documents costs time, energy, and personnel. When this kind of backtracking is necessary, even only a few times, the validity of all documents is questioned. In addition, if documentation is not completed within the appropriate time frame, the consequences can be the same as not completing the documentation at all. Don't approach the task of completing documentation lightly. Keep in mind that it may have to be used in a court of law. Do it right the first time, and do it on time.