

## **Radiological Controls Phase 1& 2**

### **OBJECTIVE:**

**RADCON** An integrated process has been established which assures the successful conduct of occupational radiation protection operations consistent with the requirements of 10 CFR 835.

### **CRITERIA:**

1. Procedures and/or mechanisms are in place to ensure that the radiation protection program (RPP) address the requirements of 10 CFR 835 and is integrated into the work planning process to fully analyze hazards and develop appropriate controls.

*Review the RPP adequately address the requirements of 10 CFR 835 and verify that all requirements are addressed or that the RPP clearly identifies any exemptions that have been approved from the subject requirements*

*Review documents and/or mechanisms that govern the process for planning, authorizing, and conducting radiological work and verify that the hazards and appropriate controls have been integrated into the work planning documents.*

2. Procedures and/or mechanisms are in place that ensures that the radiological activities are being conducted in accordance with the RPP. The RPP includes formal plans and measures for applying the as low as reasonably achievable (ALARA) process and ALARA is incorporated into radiological activities.

*Review documents and/or mechanisms that govern the process for planning, authorizing, and conducting radiological work for inclusion of ALARA principles*

3. Procedures and/or mechanisms are in place which ensures that changes to the RPP are made prior to initiation of work not addressed by the RPP. Subcontractor activities are addressed by the RPP.

*Review updates of the RPP submitted to verify that they were submitted to DOE as required.*

*Verify that changes have been submitted prior to the initiation of a task not within the scope of the RPP.*

4. Procedures and/or mechanisms are in place which ensures that there is evidence of management commitment to ALARA goals and principles. Plans and measures are commensurate with the expected level of exposure. There is evidence of physical design features (e.g. confinement ventilation, shielding) or administrative controls.

*Interview managers and verify that there is evidence of management commitment to the ALARA program.*

*Review radiological work areas for s there evidence of either physical design features (e.g., confinement ventilation, remote handling, shielding) or administrative controls. Do the physical and administrative controls in place implement the ALARA process?*

5. Procedures and/or mechanisms are in place which ensures that timely analysis of personnel dosimetry and transmission of results, dose evaluation and recommendations to monitored individuals, management and DOE, as necessary. Is the External Dosimetry Program accredited by DOE?

*Review the performance measures and performance indicators established to determine that these tools provide information that is truly a direct indicator of how safely the radiological work is being performed.*

6. Procedures and/or mechanisms are in place which ensures that timely analysis of radiobioassay samples and results and transmission of results, dose evaluation and recommendations to operations, management and DOE, as necessary.

*Verify that radiobioassay samples are provided and results are documentation for all occupational doses received during the current year (except for doses from planned special exposures and emergency exposures) been obtained to demonstrate compliance with the dose limits in § 835.202(a).*

7. Procedures and/or mechanisms demonstrate effective area monitoring. Field and laboratory instruments used to perform monitoring are sufficiently sensitive. Is airborne radioactivity monitored as necessary?

*RARE 1.5.2, Radcon instrumentation available and calibrated*

*Verify airborne radioactivity is monitored where an individual is likely to receive an exposure of 40 or more DAC-hours in a year.*

*Verify airborne radioactivity is monitored as necessary to characterize the airborne radioactivity hazard where respiratory protective devices are required for protection against airborne radionuclides.*

8. Procedures and/or mechanisms are in place which ensures that Radiological Work Permits are in place. Personnel entry controls are put into place and personnel are observed adhering to the entry and RWP requirements. Appropriate training is required for access to radiological controls areas.

*Review these documents to determine if they are adequate, that they demonstrate effective integration, and that proper procedures were followed to prepare, review, and approve them.*

*Verify adequate worker involvement at each step of the process.*

*Verify that RWPs are required for:*

- o Entry into radiological areas?*
- o Handling of materials with removable contamination that exceed the values of 10 CFR 835?*
- o Work in localized benchtop areas, laboratory fume hoods, sample sinks, and containment devices that have the potential to generate contamination in areas that are otherwise free of contamination?*
- o Work that disturbs the soil in soil contamination areas?*
- o Work that involves digging in underground radioactive material areas?*

*RARE 1.5.1, Adequate number of trained Radcon support assigned to project*

*RARE 1.5.3, RWPs developed and approve*

9. Procedures and/or mechanisms are in place that consider emergency exposure situations.

10. Procedures and/or mechanisms are in place to capture required records, e.g. occupational exposure resulting from activities, and the records are used to assess compliance with requirements. Annual reports of dose have been sent to individuals. The results of monitoring for the release of material and control of material and equipment is documented and maintained.

*Verify records are maintained to document doses received by all individuals for whom monitoring was required pursuant to § 835.402 and doses received during planned special exposures, unplanned doses exceeding the monitoring thresholds of § 835.402, and authorized emergency exposures?*

*Verify results of individual external and internal dose monitoring that is performed, but not required by § 835.402, recorded?*

*Recording of nonuniform shallow dose equivalent to the skin is not required if the dose is less than 2 percent of the limit specified for the skin at § 835.202(a)(4).*

*Verify records are sufficient to evaluate compliance with the dose limits in subpart C of 10 CFR 835.*

#### **APPROACH:**

**Record Reviews:** (List of documents with title, date, revision)

**Interviews:** (List of interviews conducted by functional title)

**Field and/or Work Activities Reviewed:** (If any)

#### **DISCUSSION OF RESULTS:**

**CONCLUSION:** (The objectives were met/not met)

Concern: (Programmatic noncompliance with requirements)

Finding: (Single noncompliance with requirements)

Comment: (Both positive and negative activities; no specific requirement)