

CHAPTER 2

POSTING AND LABELING FOR RADIOLOGICAL CONTROL

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Sandia National Laboratories



MN471016, *Radiological Protection Procedures Manual*

CHAPTER 2

POSTING AND LABELING FOR RADIOLOGICAL CONTROL

This document is no longer a corporate process requirement. This document implements the requirements of Corporate Procedure [ESH100.2.RAD.1, Implement Radiation Protection Procedures](#).

Important Notice: A printed copy of this document may not be the document currently in effect. The official version is the online version located on the Sandia Restricted Network.

Sponsor: Jaime L. Moya, 600
Subject Matter Expert: [Robert Leeds](#)
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List of Acronyms

Acronym	Definition
ALARA	as low as reasonably achievable
DOE	Department of Energy
DOT	Department of Transportation
ES&H	Environment, Safety, and Health
ISMS	Integrated Safety Management System
PPE	personal protective equipment
RP	Radiation Protection
SNL	Sandia National Laboratories
TED	total effective dose
TWD	technical work document

2.1 Purpose

This chapter presents requirements and guidance for radiological posting and labeling at Sandia National Laboratories (SNL).

2.2 Scope

This chapter applies to all radiological posting and labeling practices at SNL.

2.3 Responsibilities

2.3.1 Managers

Managers are responsible for ensuring that:

- Controlled areas, [radiological areas](#), and [radioactive material areas](#) are posted, and individual items and containers are labeled in accordance with the requirements of this chapter.
- Postings accurately reflect radiological conditions.
- Postings are legible and easy to understand, and remain unaltered.

2.3.2 Personnel

[Radiation Protection \(RP\) personnel](#) are responsible for providing:

- Radiological signs and labels that meet specified requirements.
- Guidance in determining posting and labeling requirements.
- Guidance with regard to placement of temporary and permanent fixtures for the purpose of posting.
- Guidance with regard to disposal of contaminated and non-contaminated radiological signs and labels.

2.4 Procedure

2.4.1 General Posting and Labeling

Requirements

Managers shall ensure that:

- Radiological postings and labels reflect current conditions in the area.
Note: Postings **and labels** may need to be upgraded or downgraded to be current. Postings that reflect the conditions during intermittent operations fulfill this requirement.
- All signs and labels required by this procedure bear the standard radiation trefoil in magenta or black imposed upon a yellow background. **[10 CFR 835.601(a)]**
- All signs required by this procedure are clearly and conspicuously posted. **[10 CFR 835.601(b)]**
- If more than one radiological condition exists in an area and requires posting, each radiological condition is identified. **[10 CFR 835.603]**
- If other hazardous conditions exists (e.g., chemical, electrical), the condition(s) are posted separately in accordance with the requirements of the appropriate **Environment, Safety, and Health (ES&H) corporate procedures**.

The requirements of this chapter and [Chapter 5](#), “Entry Control,” do not apply to radioactive material transportation by the Department of Energy (DOE) or a DOE contractor conducted:

- Under the continuous observation and control of an individual who is knowledgeable of and implements required exposure control measures, or
- In accordance with Department of Transportation (DOT) regulations or DOE orders that govern such movements. **[10 CFR 835.1(d)]**

Although radioactive material in transport may be excepted from posting, labeling, and entry control requirements, personnel shall establish appropriate controls over the movement of such materials as necessary to limit exposures consistent with the as low as reasonably achievable (ALARA) principle and to identify and control hazards in accordance with the [Integrated Safety Management System \(ISMS\)](#).

Guidance

Managers may use the following information to assist with posting:

- Required signs may include radiological protection instructions such as dosimetry requirements, training requirements, personal protective equipment (PPE) requirements, etc. **[10 CFR 835.601(b)]**
- Postings that indicate intermittent radiological conditions may include statements specifying when the condition exists, such as in the examples provided below.

**CAUTION: RADIATION AREA
WHEN RED LIGHT IS ON**

**GRAVE DANGER
VERY HIGH RADIATION AREA
WHEN ACCELERATOR FIRES**

- Rope, tape, chain, or similar barrier material used to designate radiological areas should be yellow and magenta.
- Physical barriers should be placed so that they are clearly visible from all accessible directions and elevations (if more than one elevation is affected).
- Postings at doorways should be positioned so that they are always visible whether doors are open or closed.
- Postings and barriers should not be moved or altered without prior notification to [RP](#).
- Multiple radiological conditions should be posted using one of the following practices:
 - Posting each radiological condition on a separate sign with any appropriate supplemental wording.
 - Posting all radiological conditions on one or more signs (e.g., user-changeable signs using inserts) using the most stringent heading and listing the radiological areas in decreasing order of importance. (Consult [RP](#) for guidance on posting hierarchy.) Any supplemental information should follow the radiological area designations.

Note: The second method is preferred because it reduces clutter and is more efficient.

- Very high radiation area postings should be established on an exclusive sign without other radiological area designations. **[DOE G 441.1-1C]**
- Signs used for training should be clearly marked, such as “For Training Purposes Only.” **[DOE-STD-1098-2008]**

2.4.2 Specific Posting Criteria

Requirements

Managers shall be responsible for ensuring that:

- Proper posting is maintained in accordance with the following sections of this procedure.
- Postings are verified by field measurement and observations conducted as an element of any of the following:
 - Routine surveys
 - Job coverage
 - Changes in facility use

2.4.2.1 Controlled Areas

Requirements

Managers shall be responsible for ensuring that:

- Each access point to controlled areas is posted, whenever radiological areas or radioactive material areas exist in the area. Individuals who enter only controlled areas without entering radiological areas or radioactive material areas are not expected to receive a total effective dose of more than 0.1 rem (0.001 Sv) in a year. **[10 CFR 835.602(a)]**
- All access points are posted with the words “Caution, Controlled Area.” **[DOE G 441.1-1C]**
- Controlled area boundaries are established and completely surround radiological or radioactive material areas. **[DOE-STD-1098-2008]**

Guidance

Managers may post controlled areas with signs that do not meet the requirements as to color and design to avoid conflict with local security requirements. **[10 CFR 835.602(b)]** However, the yellow and magenta color scheme, and the standard radiological hazard warnings are preferred. **[DOE G 441.1-1C]**

Note: Controlled area boundaries may be contiguous with or larger than the boundaries of radiological or radioactive material areas.

2.4.2.2 Radiological Areas and Radioactive Material Areas

Requirements

Managers shall ensure that all access points to radiological areas or radioactive material areas are posted with conspicuous signs bearing the wording specified in **Table 2–1**. **[10 CFR 835.603]**

Table 2–1. Radiological and Radioactive Material Area Signs

Type of Area	Required Wording
Radiation Area	“Caution, Radiation Area” [10 CFR 835.603(a)]
High Radiation Area	One of the following: <ul style="list-style-type: none">• “Caution, High Radiation Area”• “Danger, High Radiation Area” [10 CFR 835.603(b)]
Very High Radiation Area	“Grave Danger, Very High Radiation Area” [10 CFR 835.603(c)]
Airborne Radioactivity Area	One of the following: <ul style="list-style-type: none">• “Caution, Airborne Radioactivity Area”• “Danger, Airborne Radioactivity Area” [10 CFR 835.603(d)]

Type of Area	Required Wording
Contamination Area	“Caution, Contamination Area” [10 CFR 835.603(e)]
High Contamination Area	One of the following: <ul style="list-style-type: none">• “Caution, High Contamination Area”• “Danger, High Contamination Area” [10 CFR 835.603(f)]
Radioactive Material Area	“Caution, Radioactive Material(s)” [10 CFR 835.603(g)]

2.4.2.3 Exceptions to Posting

Guidance

Managers are allowed the following exceptions to postings:

Radiological Areas and Radioactive Material Areas

Areas may be excepted from the above posting requirements for periods of less than 8 continuous hours when placed under continuous observation and control of an individual knowledgeable of and empowered to implement required access and exposure control measures. **[10 CFR 835.604(a)]**

Radioactive Material Areas

Areas may be excepted from the radioactive material area posting requirements when:

- Posted as radiological areas (i.e., Radiation Area, High Radiation Area, Very High Radiation Area, Contamination Area, High Contamination Area, or Airborne Radioactivity Area) in accordance with [Section 2.4.2.2](#). **[10 CFR 835.604(b)1]**
- Each item or container of radioactive material is labeled in accordance with [Section 2.4.3](#) such that individuals entering the areas are made aware of existing/potential hazards. **[10 CFR 835.604(b)2]**
- The radioactive materials of concern consist solely of structures or installed components that have been activated, such as by being exposed to neutron radiation or particles produced by an accelerator. **[10 CFR 835.604(b)3]**

Areas intended for receipt only (e.g., Shipping and Receiving) of packages received from [offsite](#) need not be posted in accordance with [Section 2.4.2.2](#) until the packages are monitored, provided that both of the following criteria are met:

- The packages are labeled in accordance with DOT regulations.
- The packages are in non-degraded condition (e.g., not damaged, wet).

[10 CFR 835.604(c)]

See [Chapter 6](#), “Control of Radioactive Material,” for monitoring requirements.

Although certain areas may be excepted from posting, appropriate controls should be established over these areas to limit exposures consistent with ALARA and [ISMS](#). **[DOE G 441.1-1C]**

The exceptions discussed above apply only to area posting requirements and do not apply to entry control requirements (e.g., access control, PPE, dosimetry) exclusive of radioactive material in transportation in accordance with [Section 2.4.1](#) or to radiation safety training requirements. Decisions regarding omission of postings should be documented in appropriate [technical work documents](#) (TWD). [\[DOE G 441.1-1C\]](#)

For areas that will be unposted for less than 8 continuous hours (using an individual to control access), the observing/controlling individual should be stationed to provide both of the following:

- Line-of-sight surveillance of the access points and area boundaries, if possible
- Verbal warnings

2.4.2.4 Supplemental Postings

Requirements

Managers shall ensure that:

- When areas are established (see [Chapter 6](#), “Control of Radioactive Material,” for establishment criteria), all access points are posted with conspicuous signs bearing the wording specified in [Table 2–2](#).

Table 2–2. Supplemental Postings

Type of Area	Required Wording
Radiological Buffer Area	“Caution, Radiological Buffer Area”
Soil Contamination Area	“Caution, Soil Contamination Area”
Underground Radioactive Material Area	“Caution, Underground Radioactive Material Area”
Fixed Contamination Area	“Caution, Fixed Contamination Area”
	“Caution, Hot Particle Area”
Hot Spot Area	“Caution, Hot Spot Area”

- Soil contamination areas are located within posted controlled areas if access to soil contamination areas is likely to result in individual total effective dose (TED) doses greater than 100 mrem in 1 year from the radioactive material in the soil.
- Soil contamination areas are posted and controlled as posted contamination areas (or high contamination areas) when monitoring shows that radioactive material can be transferred from soil contamination areas at levels greater than those specified for removable contamination in Chapter 6, [Attachment 6-1](#).
- Underground radioactive material areas are located within posted controlled areas if access to such areas is likely to result in individual TED doses greater than 100 mrem in 1 year from the underground radioactive material.

- Fixed contamination areas are located within posted controlled areas if access to the fixed contamination areas is likely to result in individual TED doses greater than 100 mrem in 1 year from the fixed contamination.
- Individual locations identified as having fixed contamination equal to or above the levels specified in column 1 of Chapter 6, [Attachment 6-1](#), are posted or labeled identifying the locations as having fixed contamination.

[DOE-STD-1098-2008]

Guidance

Managers may use the following information to assist with posting:

- Postings for soil contamination areas and underground radioactive material areas should include instructions or special warnings to workers regarding intrusive work.
- It is not necessary to place physical barriers around the boundaries of soil contamination areas and/or underground radioactive material areas if appropriate signs are placed at normal access points and along the boundaries.
- Large remote areas (e.g., test sites) should use fencing or other means to identify boundaries, when practical. At a minimum, normal access routes should be marked to identify such areas.
- A program to inspect and replace all outdoor postings for worn/faded/missing postings should be implemented.
- If several areas of fixed contamination exist throughout a room, the entrance may be posted rather than each surface. In this case, it is recommended that supplemental instructions be included on the posting to provide workers with precautions or controls imposed for working in the area.
- Installed temporary shielding should be posted or labeled with the following or equivalent wording: “Temporary Shielding, Do Not Remove without permission from Radiation Protection.”

2.4.3 Radioactive Material Labeling

Requirements

Managers shall ensure that:

- Except as provided in [Section 2.4.4](#), all items and containers of radioactive material are labeled (this includes devices such as gas chromatographs, x-ray diffraction units, radiography units, equipment, etc., containing radioactive material).
- Labels are durable and contain the standard radiation warning trefoil and the words “Caution, Radioactive Material” or “Danger, Radioactive Material.”
- Labels provide sufficient information to permit individuals handling or using the containers, or working in the vicinity of the containers to take precautions to avoid or minimize exposures.

- Labels are clearly visible on items or containers. **[10 CFR 835.605]**
- If labels applied to items are not clearly visible through a container (e.g., plastic bags, lead pigs, boxes), then an additional label is placed on the exterior of the container holding the radioactive material. **[DOE G 441.1-1C] [Corrective Action #5 to Occurrence Report ALO-KO-SNL-7000-2000-0003, Radioactively Contaminated Lead in Uncontrolled Area]**
- Material and equipment with fixed contamination are clearly labeled to alert personnel of the contaminated status. **[10 CFR 835.1101 (c)]**

2.4.4 Exceptions to Radioactive Material Labeling

Requirements

Although items and containers of radioactive material may be excepted from labeling, personnel shall establish appropriate controls over the storage, movement, and use of unlabeled items and containers as necessary to limit exposures consistent with the ALARA principle and to identify and control hazards in accordance with **ISMS**. **[DOE G 441.1-1C]**

Guidance

Managers are allowed the following exceptions to labeling:

- Items or containers may be excepted from radioactive material labeling if:
 - The items or containers are used, handled, or stored in areas posted in accordance with [Section 2.4.2.2](#), and controlled such that sufficient information is provided to permit individuals to take precautions to avoid or control exposures. **[10 CFR 835.606(a) 1]**
 - The quantity of radioactive material is less than one-tenth of the values specified in Appendix E and less than 0.1 Ci ([Word file](#)/[Acrobat file](#)). **[10 CFR 835.606(a) 2]**
 - The items or containers are packaged, labeled, and marked in accordance with the regulations of DOT or the requirements of DOE orders governing radioactive material transportation. **[10 CFR 835.606(a) 3]**
 - The items or containers are inaccessible or are accessible only to individuals authorized (i.e., through an approved TWD) to handle or use them, or to work in the vicinity. **[10 CFR 835.606(a) 4]**
 - The items or containers are installed in manufacturing, process, or other equipment, such as reactor components, piping, and tanks. **[10 CFR 835.606(a) 5]**
 - The radioactive material consists solely of nuclear weapons or their components. **[10 CFR 835.606(a) 6]**
 - The radioactive material is in transport in accordance with [Section 2.4.1](#).
- Radioactive material labels applied to sealed radioactive sources may be excepted from the color specifications of [Section 2.4.1](#). **[10 CFR 835.606(b)]**

Managers may use the following information to assist with labeling:

- For containers with numerous items of radioactive material, the determination of the need for labeling the container should be based upon the sum of the activities of the individual items.
- When DOT labels are used as an alternative to the above requirements (see [Section 2.4.2.2](#)), measures should be implemented to ensure that affected individuals are familiar with the labels and the hazards and precautions associated with the labeled material.
- Although items and containers of radioactive material may be excepted from labeling when the material is stored in an area already posted in accordance with [Section 2.4.2.2](#), caution should be exercised in applying this exception. The area radiological posting and required controls may not be sufficient to protect the individual if the hazard created by working with or in the vicinity of the item or container is different than the general area hazard. For example, the required postings and controls for a “Contamination Area” may not be sufficient if the item or container stored within creates a radiation exposure hazard if opened or used. Supplemental labels should be used in conjunction with the labeling required in [Section 2.4.3](#). Examples of supplemental labels include but are not limited to the following:
 - “Contaminated”
 - “Potentially Contaminated”
 - “Internally Contaminated”
 - “Potentially Internally Contaminated” **[DOE-STD-1098-2008]**
- For consistency, consult [RP](#) for labels currently used at SNL.

2.4.5 Disposal of Radiological Signs and Radioactive Material Labels

Requirements

Managers shall be responsible for ensuring that:

- Radiological signs and radioactive material labels that are not contaminated are not disposed of in clean trash, unless they have been destroyed (by cutting, shredding, or otherwise tearing) to a point that the radiological warnings (pictorial and verbiage) are unrecognizable.
- Contaminated radiological signs and radioactive material labels are disposed of as radioactive waste; no destruction of these is necessary.

Guidance

Managers should consult [RP](#) for assistance and guidance regarding disposal of larger signs and labels.

2.5 Records

Requirements

Members of the Workforce who generate occupational radiation protection related records shall use the special units of curie, rad, roentgen, or rem, including multiples and subdivisions of these units, or other conventional units, such as, dpm, dpm/100 cm², or mass units. The SI units, becquerel (Bq), gray (Gy), and sievert (Sv), may be provided parenthetically for reference with scientific standards. **[10 CFR 835.4]**

Managers shall be responsible for ensuring that records are maintained to document compliance with the RP Program. **[10 CFR 835.701(a)]**

Unless otherwise specified, records shall be retained for 75 years or until final disposition is authorized by DOE. **[10 CFR 835.701(b)]**

Unless otherwise authorized, the method for recording, storage, retention, and archival of these records is in accordance with [IM100.2.2, Control Records](#), and as specified in the [Sandia Records Retention and Disposition Schedule](#) maintained by the Customer Funded Records Center within the Recorded Information Management Department, filed under records series HE-130-207-000.

If using an alternate system (reviewed and authorized by the Recorded Information Management Department as capable of meeting the regulatory required retention period identified previously) for records maintenance, it is the responsibility of the individual organization to assure long-term retention of these records and to ensure that they are retrievable over their required storage lifetime, as identified previously.

2.6 References

2.6.1 Requirements Source Documents

[10 CFR 835, Occupational Radiation Protection.](#)

[DOE-STD-1098-2008, Radiological Control.](#)

2.6.2 Implementing Documents

[SNL, ES&H corporate procedures.](#)

[SCM100.3.19, Move Hazardous Material.](#)

2.6.3 Related Documents

[DOE G 441.1-1C Admin Chg. 1, Radiation Protection Programs Guide for Use with Title 10, Code of Federal Regulations, Part 835, Occupational Radiation Protection.](#)

Change History

December 7, 2017 Administrative Changes

Changed SME from Lisa Barteau to Robert Leeds.

August 17, 2017 Administrative Changes

Updated center and corporate information following transition:

- Changed the manual sponsor from Michael W. Hazen, 4000, to Jaime L. Moya, 600.
- Edited to limit use of “SNL.”

Changed SME from Lance Bollinger to Lisa Barteau.

Updated hyperlinks to corporate procedures and to RPPM Attachment 6-1.

Added a title for the List of Tables.

December 10, 2014 Administrative Changes

Chapter 5, Entry Control

Updated the records section in the following chapters: Introduction, 1, 2, 3, 4, 5, 6, 8, 10, 11, 12, 14. All other chapters are currently undergoing a substantive change process and the records section will be updated during that process.

Added the following text:

- Unless otherwise specified, records shall be retained for 75 years or until final disposition is authorized by DOE. **[10 CFR 835.701(b)]**

Unless otherwise authorized, the method for recording, storage, retention, and archival of these records is in accordance with IM100.2.2, *Control Records*, and as specified in the Sandia Records Retention and Disposition Schedule maintained by SNL’s Customer Funded Records Center within the Recorded Information Management Department, filed under records series HE-130-207-000. If using an alternate system (reviewed and authorized by the Recorded Information Management Department as capable of meeting the regulatory required retention period identified above) for records maintenance, it is the responsibility of the individual organization to assure long-term retention of these records and to ensure that they are retrievable over their required storage lifetime, as identified above.

Deleted the following text:

- Unless otherwise specified, records shall be retained as specified in the Sandia Records Retention and Disposition Schedule maintained by SNL’s Records Management Program typically filed under records series HE-140-257-000 or HE-140- 258-000 (<http://rim.sandia.gov/retention/nsretentionSchedule.htm>), or until final disposition is authorized by DOE. **[10 CFR 835.701(b)]**

July 8, 2014
Administrative Changes Only

Throughout the document:

- **Added:**
 - Headers and page numbers
 - List of acronyms
 - Acronym definitions at first appearance and acronyms after first appearance
 - Table captions and table references
 - Links to corporate dictionary terms
- **Deleted:**
 - Acronyms only used once
 - Acronym definitions after first appearance
 - References to inactive and cancelled procedures, documents, departments, and websites
- **Corrected:**
 - Punctuation
 - Misspellings
 - Titles and section numbers of references
 - Links to references
- **Changed:**
 - “the appropriate division ES&H team”/”division ES&H team” to “RP”

Section 2.4.2.1, Guidance heading, Note:

- **Changed** “but should be” to “or” to read as follows: “Controlled area boundaries may be contiguous with or larger than...”

Section 2.5, 3rd paragraph:

- **Added** “(see IM100.2.2, Control Records)” and “(but others may apply)”

Section 2.6.3:

- **Added** DOE G 441.1-1C, Radiation Protection Programs Guide for Use with Title 10, Code of Federal Regulations, Part 835, Occupational Radiation Protection.

March 24, 2010
Administrative Changes Only

Chapters 1, 2, 4, 5, 6, 7, 8, 9, 11, 12, 13, and 14

Change Summary	
Type of Change	Administrative
Modified	<p>Records Section:</p> <ul style="list-style-type: none">Modified verbiage to: Members of the Workforce who generate occupational radiation protection related records shall use the special units of curie, rad, roentgen, or rem, including multiples and subdivisions of these units, or other conventional units, such as, dpm, dpm/100 cm² or mass units. The SI units, becquerel (Bq), gray (Gy), and sievert (Sv), may be provided parenthetically for reference with scientific standards. [10 CFR 835.4]Chapter 9 SME Changed Chapter 9 SME from Luke Paulus to Nathan Elliott.
Reason for Change	Certain Records section passages were modified in order to eliminate variation in wording relating to the usage of radiological units.

November 11, 2009
Administrative Changes Only

Chapters 2, 5, 8, 9, and 14

Change Summary	
Type of Change	Administrative
Modified	<p>Records Section of Chapters 2, 5, 8, 9, and 14</p> <ul style="list-style-type: none">From: Unless otherwise specified, records shall be retained as specified in the Sandia Records Retention and Disposition Schedule maintained by SNL's Records Management Program...To: Unless otherwise specified, records shall be retained as specified in the Sandia Records Retention and Disposition Schedule maintained by SNL's Records Management Program typically filed under records series HE-130-207-000 (http://rim.sandia.gov/retention/nsretentionSchedule.htm). <p>Records Section of Chapter 9</p> <ul style="list-style-type: none">From: SI units (becquerel [Bq], gray [Gy], and sievert [Sv]) may be included in parenthesis after the specific units.To: SI units (becquerel [Bq], gray [Gy], and sievert [Sv]) may be provided in parenthesis after the specific units.
Reason for Change	The changes to these chapters were made in order to correct minor inconsistencies in standardized verbiage derived from the revision to 10CFR835.

November 4, 2009
Administrative Changes Only

Chapter 2, “Posting and Labeling for Radiological Control”

Change Summary					
Type of Change	Administrative				
Added	<ul style="list-style-type: none">2.4.2.4 Supplemental Postings. Added:<table border="1"><tr><td>Hot Particle Area</td><td>"Caution, Hot Particle Area"</td></tr><tr><td>Hot Spot Area</td><td>"Caution, Hot Spot Area"</td></tr></table>	Hot Particle Area	"Caution, Hot Particle Area"	Hot Spot Area	"Caution, Hot Spot Area"
Hot Particle Area	"Caution, Hot Particle Area"				
Hot Spot Area	"Caution, Hot Spot Area"				
Deleted	<ul style="list-style-type: none">2.4.2.4 Supplemental Postings. Deleted:<table border="1"><tr><td>Radioactive Material Management Area (RMMA)</td><td>One of the following:<ul style="list-style-type: none">"Caution, Radioactive Material Management Area"A sign insert using the initialism "RMMA"Note: RMMA are established for waste management areas. See PLA 94-40, <i>Program Plan for Radioactive Material Management Areas (RMMA)</i> for specific establishment criteria.</td></tr></table>2.6.3 Related Documents. Deleted:<p>PLA 94-40, <i>Program Plan for Radioactive Material Management Areas (RMMA)</i>.</p>	Radioactive Material Management Area (RMMA)	One of the following: <ul style="list-style-type: none">"Caution, Radioactive Material Management Area"A sign insert using the initialism "RMMA" Note: RMMA are established for waste management areas. See PLA 94-40, <i>Program Plan for Radioactive Material Management Areas (RMMA)</i> for specific establishment criteria.		
Radioactive Material Management Area (RMMA)	One of the following: <ul style="list-style-type: none">"Caution, Radioactive Material Management Area"A sign insert using the initialism "RMMA" Note: RMMA are established for waste management areas. See PLA 94-40, <i>Program Plan for Radioactive Material Management Areas (RMMA)</i> for specific establishment criteria.				
Reason for Change	The RPSCRS discussed these changes and agreed that the one posting should be eliminated (RMMA later replaced by PLA 94-40) as an administrative deletion. The two other postings are being added to the table administratively since they had been previously authorized in 2006 but were never implemented; the oversight of their implementation is simply being corrected.				

October 13, 2009

Chapters: All

This document is no longer a CPR. This document implements the requirements of Corporate Procedure ESH100.2.RAD.1, Implement Radiation Protection Procedures

June 16, 2009

Chapter 2, “Posting and Labeling for Radiological Control”

- Under the topic “Procedure,” sub-topic “General Posting and Labeling”:
 - Add:** The requirements of this chapter and Chapter 5, “Entry Control,” do not apply to radioactive material transportation by DOE or a DOE contractor conducted:
 - (1) Under the continuous observation and control of an individual who is knowledgeable of, and implements required exposure control measures, or
 - (2) In accordance with Department of Transportation regulations or DOE orders that govern such movements. **[10 CFR 835.1(d)]**

Although radioactive material in transport may be excepted from posting, labeling, and entry control requirements, SNL personnel shall establish appropriate controls over the movement of such materials as necessary to limit exposures consistent with the ALARA principle and to identify and control hazards in accordance with the Integrated Safety Management System (ISMS). **[DOE G 441.1-10]**

- Under the topic “Exceptions to Posting”:
 - **Add:** “*...exclusive of radioactive material in transportation in accordance with 2.4.1*” to the sentence, “The exceptions discussed above apply only to area posting requirements and do not apply to entry control requirements (e.g., access control, personal protective equipment [PPE], dosimetry) exclusive of radioactive material in transportation in accordance with 2.4.1 or to radiation safety training requirements.”
- Under the topic “Records”:
 - **Delete:** SNL personnel who generate occupational radiation protection related records shall use the special units of curie, roentgen, rad, and rem for activity, exposure, dose and equivalent dose respectively. Multiples and subdivisions of these units, or other conventional units, such as, dpm, dpm/100 cm² or mass unit are allowed. SI units (becquerel [Bq], gray [Gy], and sievert [Sv]) may be included in parenthesis after the special units. **[10 CFR 835.4]**
 - **Delete:** Managers shall be responsible for ensuring that records are maintained:
 - To document compliance with SNL’s radiation protection record-keeping requirements as implemented in the *Sandia Records Retention and Disposition Schedule* by the Recorded Information Management Department (4912). **[10 CFR 835.701(a)]**
 - Until final disposition is authorized by the National Archives and Records Administration (NARA) through DOE. **[10 CFR 835.701(b)]**
 - **Add:** Members of the Workforce who generate occupational radiation protection related records shall use the specific units of curie, roentgen, rad, or rem, including multiples and subdivisions of the units or other conventional units, such as, dpm, dpm/100 cm² or mass units SI units (becquerel [Bq], gray [Gy], and sievert [Sv]) may be provided in parenthesis after the specific units. **[10 CFR 835.4]**

Managers shall be responsible for ensuring that records are maintained to document compliance with SNL’s Radiation Protection Program. **[10 CFR 835.701(a)]**

Unless otherwise specified, records shall be retained as specified in the Sandia Records Retention and Disposition Schedule maintained by SNL’s Records Management Program or until final disposition is authorized by DOE. **[10 CFR 835.701(b)]**

April 11, 2008 Administrative Changes Only

Chapters: All

Global change to insert appropriate reference to Corporate training requirements and documentation. See detailed change history for ES&H Manual, 4/11/08.

April 1, 2008
Administrative Changes Only

Chapter 2, “Posting and Labeling for Radiological Control,” was revised to:

- Update the Table of Contents in the chapter to reflect all numbered paragraph headings (i.e., all section headings and subordinate paragraph headings).

March 11, 2008
Administrative Changes Only

Chapter 2, “Posting and Labeling for Radiological Control,” was revised to:

- Renumber all section headings to include the chapter number.
- Update all section references within in the chapter to reflect the renumbering.
- Verify and update all section reference links.

September 4, 2007
Administrative Changes Only

Chapter 2, “Posting and Labeling for Radiological Control,” was revised to:

- **Change:** The SME from Thomas Laiche to Lance Bollinger.

September 22, 2006

Chapter 2, “Posting and Labeling for Radiological Control,” was revised to:

- **Add:** A review date to the header to indicate that an ES&H Manual & Supplements Self-Assessment checklist was completed on this supplement.
- Under the topic “4.1, General Posting and Labeling”:
 - **Correct:** The requirement for managers to ensure that radiological postings and labels reflect current conditions in the area by removing the requirement citation **[10 CFR 835.601(a)]**.
- Under the topic “4.2.1, Controlled Areas”:
 - ***Add:** Requirement for Managers to ensure that, “each access point to controlled areas is posted, whenever radiological areas or radioactive material areas exist in the area. Individuals who enter only controlled areas without entering radiological areas or radioactive material areas are not expected to receive a total effective dose equivalent of more than 0.1 rem (0.001 sievert) in a year.” **[10 CFR 835.602(a)]**
 - ***Delete:** Requirement for Managers to ensure that, all access points to controlled areas are posted whenever radiological areas or radioactive material areas exist in the area. **[10 CFR 835.602(a)]**

March 10, 2003
Administrative Changes Only

Chapter 2, "Posting and Labeling for Radiological Control," was revised to:

- **Add:**
 - To the Section 4.1, "General Posting and Labeling, Requirements," a clarification to the general requirement for posting that **radiological postings and labels reflect current conditions in the area.**
- **Add:**
 - To the Section 4.2, "Specific Posting Criteria, Requirements," a restatement to follow the requirement of this chapter and clarification that **field measurement and observations conducted as an element of routine surveys, job coverage, or changes in facility use** are acceptable as verification of postings.

November 3, 2000

This chapter was revised to:

- **Add:**
 - In Section 4.3, "Radioactive Material Labeling," move to "Requirements," the need for external labeling when the internal label is not clearly visible through the external container. Moved from "Guidance" in Section 4.4, "Exemptions to Radioactive Material Labeling."
 - In Section 4.3, "Radioactive Material Labeling," add the 10 CFR 835 requirement that material or equipment with fixed contamination are clearly labeled to alert personnel of the contaminated status.
 - In Section 4.4, "Exemptions to Radioactive Material Labeling," move to "Requirements" from "Guidance," the need for radioactive material to be properly controlled although it may be exempt from labeling requirements.

January 11, 2000

This list of changes includes only additions, changes, and deletions to requirements. Changes to guidance and general information are not listed. See the RPPM manual to become aware of all changes made to the text and Attachments.

Chapters: All

General Changes:

- Reformat chapters 1 through 14 into the Requirements and Guidance format similar to the *ES&H Manual*.
- Update responsibilities following Centers 7400 and 7500 reorganization and integration to Center 7100.