



Environment, Safety, Health & Assurance

Interoffice Communication

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cc: Shawn Nelson, Assistant Manager ESH&A
Topical Appraisal 2015

From: Michael McGuigan, Radiation Safety Officer, ESH&A

Date: May 26, 2015

Subject: RPP Functional Element Area, Radiological Controls, Release of Materials and Equipment

The Topical Appraisal is attached.

Topical Appraisal - RPP Functional Element Area, Rad. Controls, Release of Materials and Equipment

1.0 Scope

This topical appraisal was conducted to review the Laboratory's RPP functional element area, Radiological Controls, Release of Materials and Equipment Requirements, 10 CFR 835.1101, Chapter 11.0 of Guide 441.1-1C.

2.0 Dates

May 14-19, 2015

3.0 Methodology

The Laboratory's Radiation Protection Program's organization was reviewed within The Ames Laboratory's administrative and safety oversight system. Applicable regulations, guidance, and standards were reviewed to assure that the Laboratory is meeting current industry standards. The Radiological Control, Release of Materials and Equipment was also reviewed. To ensure there is no disconnect between the users and oversight, an interview was performed with the primary Radiological Control Technician who performs the bulk of the processing of property transfer tags, a.k.a. "green tags."

3.1 References

The following references were reviewed for this appraisal:

- Title 10 of Code of Federal Regulations, Part 835 (10 CFR 835), *Occupational Radiation Protection*,
- DOE Guide 441.1-1C, *Radiation Protection Programs Guide, Chapter 11.0*
- DOE Standard 1098-2008 Ch1, *Radiological Control*,

The regulatory requirements from 10 CFR 835.1101, Radiological Controls, Release of Materials and Equipment requirements have been placed in the matrix below. The Compliance/Comment column points to the documentation and coverage of the rule.

§ 835.1101 Control of material and equipment.	Compliance/Comment
(a) Except as provided in paragraphs (b) and (c) of this section, material and equipment in contamination areas, high contamination areas, and airborne radioactivity areas shall not be released to a controlled area if: (1) Removable surface contamination levels on accessible surfaces exceed the removable surface contamination values specified in appendix D of this part; or (2) Prior use suggests that the removable surface contamination levels on inaccessible surfaces are likely to exceed the removable surface contamination values specified in appendix D of this part.	Procedure 10202.008 page 10: Except as noted below, any material that enters contaminated areas shall be retained there if: - Surveys of accessible surfaces indicate the presence of contamination at levels exceeding the values provided in Appendix D of 10 CFR 835; or - Prior use of the material indicates that contamination levels on inaccessible surfaces are likely to exceed these levels.

<p>(b) Material and equipment exceeding the removable surface contamination values specified in appendix D of this part may be conditionally released for movement on-site from one radiological area for immediate placement in another radiological area only if appropriate monitoring is performed and appropriate controls for the movement are established and exercised.</p>	<p>Procedure 10202.008 page 11: Under certain circumstances, materials having contamination levels in excess of the values provided in Appendix D of 10 CFR 835 may be released to controlled areas. Materials having either removable or total contamination levels in excess of these values may be released for movement to another radiological area. Appropriate surveys and control procedures include:</p> <ul style="list-style-type: none"> -Determining the contamination levels before movement; -Wrapping or containing the material to prevent the spread of contamination; -Applying appropriate labels to the material and placing postings at the destination; -Selecting a transportation path to minimize the potential for contamination spread; and -Surveying the transportation path after movement to ensure that contamination has not been spread.
<p>(c) Material and equipment with fixed contamination levels that exceed the total surface contamination values specified in appendix D of this part may be released for use in controlled areas outside of radiological areas only under the following conditions:</p> <ol style="list-style-type: none"> (1) Removable surface contamination levels are below the removable surface contamination values specified in appendix D of this part; and (2) The material or equipment is routinely monitored and clearly marked or labeled to alert personnel of the contaminated status. 	<p>Procedure 10202.008 page 11: Materials having fixed contamination in excess of the total surface radioactivity values provided in Appendix D of 10 CFR 835 may be released for use in controlled areas. Release of such materials shall require that:</p> <ul style="list-style-type: none"> -Removable contamination levels be below the values provided in Appendix D. Contamination levels should be assessed in accordance with the guidance provided in this procedure; -Routine surveys be conducted. The surveys should be adequate to ensure that the radiological hazard resulting from the release is fully characterized and that appropriate posting, labeling, and access control measures are implemented; -The material is clearly marked or labeled. Guidance for material labeling is provided in Ames Laboratory Procedure, Posting and Labeling for Radiological Control” and the AL Radiation Safety Manual; and - Written procedures are implemented. The procedures should address each of the issues discussed above and should establish any additional requirements necessary to prevent the spread of contamination and to ensure untrained and unmonitored individuals present in the controlled area are not unnecessarily exposed to the material.

3.2 Program Documentation

The following programmatic documents were reviewed:

- *Radiation Protection Program Plan* (10202.004), due for review 07-01-2016

As a result of the June 2014 DOE Radiation Protection Program Assessment, level 2 finding, F2-1, the Laboratory's RPP is currently being reviewed and reissued. The finding stated that the Laboratory's RPP document does not address each §835 requirement. A matrix was developed to demonstrate whether all §835 requirements are being adequately addressed by the current RPP. The Laboratory also committed to developing additions/updates to the RPP as necessary and assuring the matrix will demonstrate compliance with §835 requirements. The June 2014 assessment team advised that exact wording from §835 should be imbedded in the RPP and/or supporting documentations. A matrix was developed and while accomplishing this action gaps in administrative coverage were identified. Exact wording from §835, in entirety, are not present within the Ames Laboratory's RPP and/or supporting documentation. To correct the finding and improve the program, exact wording from §835 is being inserted into The Ames Laboratory RPP, and an Ames Laboratory Radiological Safety Program Description documents is being developed.

- *Ames Laboratory ESH&A Program Manual* (10200.002),

The Laboratory's Environment, Safety, Health & Assurance Program Manual (Safety Manual) was last updated in 2011. The Safety Manual is in a rewrite phase. Subject Matter Experts have been assigned sections to update the Safety Manual. The Laboratory's RSO is assigned section 7, Radiological Protection Program. Section 7 is under review and is being updated.

- *Control of Radioactive Contamination Procedure* (10202.008), the procedure was last updated 11/2012. It is due for update 11/30/2015. No issues noted.
- *Survey of Equipment/Materials for Transfer to the Ames Laboratory Warehouse Procedure* (10202.054), the procedure was last updated 03/2015. It is due for update 03/30/2018. No issues noted.

3.3 Training

No required training noted in this functional area.

3.4 Personnel Interviewed

Drew Fullerton, Radiological Control Technician, was interviewed. Talking points were his participation in the Laboratory's Green Tag Program. This program is the process whereby the Laboratory surveys and clears lab equipment and/or materials for transfer to the Ames Laboratory Warehouse for storage. Items found to be contaminated, (radiological, hazardous material) are consigned to waste management for further evaluation, characterization and waste stream designation. Mr. Fullerton voiced no concerns or issues with the Green Tag Program.

4.0 Assessment Results & Discussion

4.1 Strengths

None noted

4.2 Noteworthy Practices

None noted

4.3 Findings

- 1) Plan 10202.004 does not address all 10 CFR 835 requirements. This was already disclosed and is being addressed by finding F2-1 from the June 2014 RPP Assessment.
- 2) Section 7 of the ESH&A Program Manual is past review date. It is under review and scheduled for completion by 7-01-2015.

5.0 Overall Conclusions

Ames Laboratory is fulfilling its obligations pertaining to Radiation Protection Program organization for implementing a program that meets DOE, 10 CFR 835.1101; Radiological Controls, Release of Materials and Equipment requirements.

6.0 Attachments

Attachment One: List of RPP documents

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DocNum	DocType	Current Title
10202.043	Form	MC&A Check List
10202.021	Form	Exchange of Quarterly TLD Badges
10202.034	Form	Occupational Radiation Exposure Record
10202.016	Form	Radiological Work Permit Guidance and Checklist
10202.025	Form	RWP Summary & Close Out Form
10202.047	Form	Radiological Material Datapage
10202.018	Form	General RWP Format Template
10202.044	Form	Lost Dosimeter Report
10202.041	Form	Materials Balance Area Inventory and Report Form
10202.019	Form	Specific RWP Format Template
10202.006	Form	Checklist for Initiating the use of Rad Mat/Rad Pro devices
10202.012	Form	Radiation Survey Instrument Training (AL-157)
10202.024	Form	Sealed Source Accountability Form
10202.028	Form	Ames Laboratory Air Monitoring Record
10202.023	Form	Sealed Source Inventory Form
10202.022	Form	Analytical X-Ray System Inspection and Survey Record
10202.042	Form	MC&A Nuclear Material Transfer Form
10202.003	Form	Application for Use of Radioactive Materials
10202.003	Form	Application for Use of Radioactive Materials
10202.005	Form	Application for Use of Radiation Producing Devices
10202.008	Form	Declaration of Pregnancy
10202.033	Form	Dosimetry History Request Form
10202.037	Form	Employee Radiation Dosimetry Badge Agreements and Commitments
10202.038	Form	Ames Laboratory Dosimetry Authorization Form
10202.048	Form	RW I/II (AL-207) Practical Factors Exam Employee Sign-off Record.
10202.049	Form	Laser Hazard Assessment Form
10202.052	Form	Rad Worker II (Rad Materials) Learning Assessment b (AL-077)
10202.054	Form	L A "General Employee Radiological Training (GERT) (AL-074)
48202.014	Form	Laser User Authorization Form
10202.003	Guide	Rad Worker Study Guide for Support Staff
10202.001	Guide	Radiation Safety Study Guide for Users of Radiation Generating Devices
10202.002	Manual	Radiological Worker Study Guide
10202.002	Plan	Materials Control and Accountability Program Plan
10202.001	Plan	Internal Radiation Dosimetry Contingency Plan
10202.005	Plan	External Dosimetry Technical Basis Document
10202.004	Plan	Radiation Protection Program (RPP)
10202.012	Policy	Walk Down of Posted General Radiological Work Permits
10202.001	Policy	ALARA Policy
10202.015	Procedure	Sealed Radioactive Source Accountability and Control
10202.031	Procedure	Health Physics Group Review of Service Order Requisitions
10202.008	Procedure	Control of Radioactive Contamination

Attachment One: List of RPP documents

<u>DocNum</u>	<u>DocType</u>	<u>Current Title</u>
10202.064	Procedure	Facility Categorization for Radiological Material
10202.010	Procedure	Radiological Work Permit
10202.011	Procedure	Calibration of Portable Survey Instruments
10202.016	Procedure	Posting and Labeling for Radiological Control
10202.021	Procedure	Workplace Air Monitoring
10202.036	Procedure	External Dosimetry Program Implementation
10202.060	Procedure	Conducting Contamination and Area Monitoring Surveys
10202.014	Procedure	Receipt, Transfer, & Shipment of Radioactive Materials
10202.001	Procedure	ALARA Procedure
10202.001	Charter	ALARA Committee Charter
10202.002	Charter	Laser Safety Committee Charter
10202.001	Handout	Standard for Protection Against Radiation - Notice
10202.002	Handout	Radiation Protection Program
10200.002	Manual	ESH&A Manual "Radiation Protection"
10202.002	Manual	Radiological Worker Study Guide