



**Environment, Safety, Health & Assurance**

Interoffice Communication

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**To:** Tom Wessels  
**cc:** Shawn Nelson  
Topical Appraisal File 2012

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

**Date:** April 27, 2012

**Subject:** Radioactive material and radiation generating devices procurement process

The Topical Appraisal is attached.

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## **Topical Appraisal- Radiological Background Levels for Ames Laboratory Buildings**

### **1.0 Scope**

This topical appraisal is being conducted to review the Laboratory's procurement approval process for radioactive materials (RAM) and radiation generating devices (RGD). In order to ensure control of the types and amounts of radioactive materials and radiation generating devices entering Ames Laboratory, all purchases of these materials and devices are approved and processed by the ESH&A Office.

### **2.0 Dates**

The appraisal was performed during the month of April, 2012.

### **3.0 Methodology**

The Laboratory's purchase process was reviewed. Particular attention was focused on the Safety Office review and approval of flagged purchases of radioactive material and radiation generating devices.

#### **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 441.1C, *Radiation Protection Programs Guide*.
- DOE Standard 1098-99, *Radiological Control*.

There have been no changes to the primary regulation, 10 Code of Federal Regulations 835, which affect the Laboratory's procurement of radioactive materials and radiation generating devices. These regulations were last amended and posted on the Federal Register May 13, 2011. Amendments to the rule were to appendix C to its Occupational Radiation Protection requirements. The derived air concentration values for air immersion are calculated using several parameters. One of these, exposure time, is better represented by the hours in the workday, rather than the hours in a calendar day. Amendments to the rule have no implications to the Ames Laboratory's procurements processes. US Department of Energy is exempt from NRC licensing requirements for radioactive materials as well as State of Iowa RAM licensing and RGD State registration.

References all require that the "Radiation Control Organization," in our case ESH&A, Health Physics group, guarantee that they are approving the procurement of all RAM, sealed or not, and RGDS.

#### **3.2 Program Documentation**

The following programmatic documents were reviewed;

- Radiation Protection Program Plan (10202.004),
- Ames Laboratory ESH&A Program Manual (10200.002),
- Radiation Safety Manual (10202.001),
- Purchasing Processes Commodity Code Listings,
- Purchase Orders via Cognos8 database report writer application (eleven in total),
- Purchasing Procedures were reviewed but do not cover all Deltek processes. Purchases are electronically routed for review and approval.

### **3.3 Training**

No training implications as a result of this topical appraisal.

### **3.4 Personnel Interviewed**

Internal interviews, data collection volume, analysis and methods were discussed with the following persons listed below.

- Andrea Spiker, Manager, Procurement and Property Services, Ames Laboratory of US DOE.
- Melissa McCormick, Clerk, Procurement and Property Services, Ames Laboratory of US DOE (Deltek data entry).
- Dan Kayser, Senior Environmental Specialist, ESH&A, Ames Laboratory of US DOE (Deltek, ESH&A PO screener).

### **4.0 Assessment Results & Discussion**

Results of this appraisal are as follows:

The Radiation Protection Program Plan (#10202.004), Control of Radiological Contamination Procedure (#10202.008), and Conducting Radiological Surveys Procedure (#10202.060) were all in compliance with 10 CFR 835 requirements.

The Ames Laboratory ESH&A Program Manual was also reviewed, it was last reviewed and updated in 2010. No changes necessary to the Radiation Protection Program section 7. The Laboratory's Radiation Safety Manual is due for review May 10, 2012. No changes are necessary in sections 10.1 which deals with procurement of radioactive materials and section 11.1 which deals with the procurement of radiation generating devices.

Purchases - In the past year starting from January 2011 to the first of April 2012 all Ames Laboratory purchases were reviewed, via Cognos8 database report writing application, for radioactive material, RGD purchases and purchases of RGD parts, such as x-ray tubes. During that time period nine orders of RAM were submitted by researchers, processed and approved by ESH&A. Two of the purchases were for Ames Laboratory research activities, a sealed source (Activity# 30441.003) and a multinuclide source, a calibration source (Activity# 10202.006). The remaining seven approvals were for radiological research activities offsite of Ames Laboratory being conducted in Iowa State University (ISU) research facilities. The research is USDOE funded; the safety oversight is conducted by the ISU Safety Office, Environmental Safety and Health.

Other purchases reviewed were one for a new RGD for an existing research activity (Activity#30511.007) and a second for a replacement x-ray tube also an existing research activity (Activity#30407.018)

Purchasing Department – Purchasing Procedures were reviewed but do not entirely cover Deltek processes. Purchases are electronically routed for review and approval. Purchasing process procedures are in the early stages of being updated. Existing procedures do not accurately reflect current practices. With the advent of Deltek and all that encompasses the paperless purchasing process with its electronic tracking, approval and report writing, the former procedures no longer fully apply.

Purchasing process – A purchase requisition that is received by the Purchasing Department is first sent to the Budget Department for review then routed to Accounting, given a purchase order (PO) number, then entered into the Deltek system. RAM and RGD orders are routed to the Safety Office, ESH&A, electronically for review and approval. Once the purchase order is approved by ESH&A the purchase order is processed to completion, the order for goods and/or services is submitted to the vendor. See

attachment one for the Purchasing Processes Commodity Code Listing. This list contains coding that each purchase order is assigned. The Deltek system is programmed to route POs to the necessary approving bodies per the codes assigned to the purchase.

#### **4.1 Strengths**

The Laboratory's Procurement Department has the electronic infrastructure, the Deltek, Costpoint program, and management process that guarantee the proper approval of RAM and RGDs. The Laboratory's Readiness Review process and open door policy of ESH&A Safety Specialists provides for communication with the researchers during planning of research material needs and equipment. Radiation Workers are familiar with Laboratory policy that all RAM and RGDs must be approved for purchase and approved via Readiness Review, inventoried and tracked.

#### **4.2 Noteworthy Practices**

None

#### **4.3 Findings**

None

#### **5.0 Overall Conclusions**

The Ames Laboratory is fully compliant with the requirements of 10 CFR 835. The Laboratory's procurement process ensures control of the types and amounts of radioactive materials and radiation generating devices entering Ames Laboratory, all purchases of these materials and devices are approved and processed by the ESH&A Office.

#### **6.0 Attachments**

- Purchasing Processes Commodity Code Listings

# Attachment One

## COMMODITY CODES

(\*\*) - denotes materials (\*) - denotes services

#Credit Card Purchase	For all Credit Card Purchases	Credit Card
**ADP	All Sensitive Equipment/Computer/Printer/Fax/Copier/IPAD/iPOD/PDA/External Hard Drive/Monitor	ESG
**Construction Supplies	Piping/Plumbing/Electrical/Ductwork	ESG
**Laboratory Supplies	Consumables/Gloves/Goggles/Nuts/Bolts/Flanges/Valves	ESG
**Laboratory Equipment Accessories	Power Supply/Adapters/Heaters/Thermocouples/Sensors/Probes/Tools	ESG
**Biological Materials	Pathogens/Blood/Enzymes	ESH&A
**Chemicals	Powders/Liquids/Gases/Epoxy/Resin/Nanoscale/Refrigeration and Cooling	ESH&A
*Construction	Construction/Alterations	ESH&A
*Equipment Maintenance	Computer/Software/Scientific Equipment	ESH&A
**Metals	Powders/Sheets/Rods/Wires/Precious Metals	ESH&A
**Ionizing Radiation	<i>Crucibles - metal or ceramic = IS</i> Radioactive materials and radiation producing devices (i.e. x-rays)	ESH&A and ESG
**Laboratory Equipment	Oscilloscope/Microscope/Spectrometer/Pumps	ESH&A and ESG
**Machinery	Lathe/Drill/Press/Hoists	ESH&A and ESG
**Non-Ionizing Radiation	Lasers/Radio Frequency/UV/Arc Welder/Xenon Lamps/Microwave	ESH&A and ESG
*Equipment Repair	Installation/Repair	ESH&A and ESG
**Cleaning Supplies	Cleaners/Soap	Global
**Clothing	Boots/Socks/Shop Gloves/Leather Gloves	Global
**Computer Supplies	Consumables/Toner/Keyboard/Mouse/Webcam	Global
**Containers	Corrugated Box/Bag/Pail	Global
**Furniture/Flooring	Office/Lab Furniture/Carpet/Tile	Global
**Office Supplies	Paper/Pens/Post-it Notes/Calculator	Global
**Printed Material	Reprints/Books/Brochures	Global
**Software	Software/Licenses/Web Licenses	Global
*Conferences	Conference Expenses/Travel Reimbursement for Visitors	Global
*ISU	Any purchase or service from an ISU office/ISU Car Pool	Global
*Laundry	Laundry	Global
*Lodging	Hotel/Motel/Apartment	Global
*Memberships	Memberships/Subscriptions	Global
*Moving	Moving Expenses	Global
*Professional Services	Architect/Consultant/Lab Analysis/Education <i>Labop# - See Appendix</i>	Global
*Rental	Equipment/Vehicles/Space	Global
*Research	Research and Development/Contracts with Universities	Global
*Travel	Airline/Travel Agency	Global

\* Sens. Prof