

INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM
QUESTIONNAIRE

Colorado

Reporting Period: April 17, 2010 to April 11, 2014

Note: If there has been no change in the response to a specific question since the last IMPEP questionnaire, the State or Region may copy the previous answer, if appropriate.

A. GENERAL

1. Please prepare a summary of the status of the State's or Region's actions taken in response to each of the open recommendations from previous IMPEP reviews.
1. *The review team recommends that the State develop and implement a policy and procedure for the handling, marking, transmitting, and storing of documents containing sensitive information. (Section 3.3)*

Response: Colorado has developed a procedure for handling sensitive information and fully implemented the policy (including conducted staff training) on October 1, 2010. This procedure has been recently revised to incorporate changes implemented by the program in regard to electronic document handling. The new procedure includes the following changes:

- The procedure contains a definition of sensitive information that includes four types: proprietary, medical records (including dose records), personally identifiable information and security-related.
- All four types of sensitive documents are marked individually as sensitive. This includes unit-generated documents and documents that licensees send us.
- We control access to security related sensitive documents by moving the IC and NSTS licenses to a separate file cabinet in the file room that will be locked. Only unit staff and those who do filing have access. Similarly, reciprocity and incident/allegation files are locked up.
- Unit staff are required to lock up licenses containing sensitive information at night instead of leaving them on their desk.

¹ Estimated burden per response to comply with this voluntary collection request: 53 hours. Forward comments regarding burden estimate to the Records Management Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0183), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

2. *The review team recommends that the State evaluate its license termination and decommissioning processes to ensure that reviews are appropriate, thorough, and consistent. (Section 3.4 of the 2006 IMPEP Review) (Modified in 2010)*

Response: Since the IMPEP, Colorado has been working to improve documentation for license termination and decommissioning. Colorado has developed a procedure for license termination and decommissioning processes and fully implemented the policy (including conducted staff training) on April 25, 2012. The changes to procedures include the following items:

- The termination application was revised to ensure that licensees are submitting all records required by regulations.
- A new checklist was developed to thoroughly and consistently document termination activities.

3. *The review team recommends that the State development and implement guidance that outlines the roles and responsibilities for staff and the expectations regarding record retention to ensure that the Program's files are complete and comprehensive. (Section 3.4)-*

Response: Increased emphasis was put on proper recordkeeping after 2010 IMPEP and performance has improved. Additionally, in 2014, Colorado transitioned to the NRC's Web-based Licensing system and to an electronic filing system which has improved our record-keeping abilities.

4. *The review team recommends that the State review its implementation of the prelicensing guidance to ensure that all of the essential elements of the guidance are consistently met. (Section 3.4)*

Response: Colorado revised its prelicensing procedure and fully implemented changes (including conducting staff training) on September 15, 2010. The new procedure closely parallels the NRC prelicensing guidance. The changes to the procedure include the following items:

- A checklist was developed to document prelicensing reviews.
- A prelicensing site visit is required for all unknown entities.

5. *The review team recommends that the State establish a means to ensure that SS&D evaluations are appropriately documented and conducted with thoroughness; consistency with the current version of NUREG-1556, Volume 3; and adherence to existing guidance in product evaluations. (Section 4.2.2)*

Response: Colorado has developed a tracking system for all SS&D actions. An evaluation of the current Colorado SS&D certificates was performed to ensure that all certificates are in the proper status. Additionally, a procedure for performing SS&D evaluations has been developed and was fully implemented (including conducting staff training) on September 26, 2013. The procedure includes the following changes:

- The procedure emphasizes that all SS&D evaluations will be completed as described in NUREG 1556, Vol. 3, Rev.1.
- The procedure requires the NUREG checklist to be used to document every SS&D evaluation.
- Instead of including the SS&D information in the regular license file, each SS&D certificate will have its own file in a separate filing cabinet. In the file will be all of the issued certificates, the dockets and review sheets and the supporting documentation.
- Review of all certificates was completed on 8/17/10 and outdated sheets were inactivated in 2013.

B. COMMON PERFORMANCE INDICATORS

I. Technical Staffing and Training

2. Please provide the following organization charts, including names and positions:

(a) A chart showing positions from the Governor down to the Radiation Control Program Director;

See Attachment A

(b) A chart showing positions of the radiation control program, including management;

See Attachment B

(c) Equivalent charts for sealed source and device evaluation, low-level radioactive waste and uranium recovery programs, if applicable.

N/A, See Attachment B

3. Please provide a staffing plan, or complete a listing using the suggested format below, of the professional (technical) full-time equivalents (FTE) applied to the radioactive materials program by individual. Include the name, position, and, for Agreement States, the fraction of time spent in the following areas: administration, materials licensing & compliance, emergency response, low-level radioactive waste, uranium recovery, other. If these regulatory responsibilities are divided between offices, the table should be consolidated to include all personnel contributing to the radioactive materials program.

If consultants were used to carry out the program's radioactive materials responsibilities, include their efforts. The table heading should be:

<u>Name</u>	<u>Position</u>	<u>Area of Effort</u>	<u>FTE%</u>
Steve Tarlton	Radiation Management Program Manager	Oversees Program that includes both materials and machines regulation	50%
James Jarvis	Special Projects	40% Regulatory Development 10% Materials Licensing 10 % Materials Inspections 5% Emergency Response 10% data base support	75%
Jennifer Opila	Radiation Management Unit Leader	Supervisor of Unit responsible for Materials Licensing and Inspections	100%
Ed Stroud	Compliance Lead	95% Work leader for Materials Inspections, 5% Emergency Response	100%
James Grice	Licensing Lead	95% Work leader for Materials Licensing, 5% Emergency Response	100%
Mark Dater	Health Physicist	47.5 % Materials Licensing 47.5 % Materials Inspections 5% Emergency Response	100%
Chastiti Etherton	Health Physicist	47.5 % Materials Licensing 47.5 % Materials Inspections 5% Emergency Response	100%
Cheri Hall	Health Physicist	47.5 % Materials Licensing 47.5 % Materials Inspections 5% Emergency Response	100%
Phillip Peterson	Health Physicist	47.5 % Materials Licensing 47.5 % Materials Inspections 5% Emergency Response	100%
Carrie Romanchek	Health Physicist	47.5 % Materials Licensing 47.5 % Materials Inspections 5% Emergency Response	100%
Shiya Wang	Environmental Protection Specialist	75% Uranium Recovery, 15% Materials Inspections, 5% Materials Licensing, 5% Emergency Response	100%
Edgar Ethington	Environmental Protection Specialist	75% Uranium Recovery, 15% Materials Inspections, 5% Materials Licensing, 5% Emergency Response	100%
Derek Bailey (temporary)	Health Physicist	25 % Materials Licensing 20 % Materials Inspections 5% Emergency Response	50%

4. Please provide a listing of all new professional personnel hired into your radioactive materials program since the last review, indicate the date of hire; the degree(s) they received, if applicable; additional training; and years of experience in health physics or other disciplines, as appropriate.

Name	Formal Education	Health Physics experience
Megan Brown Hired 9/10 Left 11/13	MS Biomedical Physics BS Physics	18 months Medical Physics Graduate Student Researcher
Patrick Chittum Hired 12/10 Left 9/11	BS Business/Accounting AS Health Physics	24 years Health Physics Technician
Carrie Romanchek Hired 1/11	BA Classics	11 years Health Physics Technician
Shiya Wang Hired 5/12	PhD Astronomy MS Physics BS Physics	None
Cheri Hall Hired 8/12	MS Radiation Health Sciences BS Physics/Mathematics	1 year Graduate Teaching Assistant
Derek Bailey (Temporary) Hired 2/14	MS Health Physics BS Health Care Management	None

5. Please list all professional staff who have not yet met the qualification requirements for a radioactive materials license reviewer or inspector. For each, list the courses or equivalent training/experience they need and a tentative schedule for completion of these requirements.

Completed training for all Radiation Program Staff members is identified in Attachment C- Staff training summary. In addition, at the time of hiring, new staff are evaluated based on their prior experience and training to determine what specific functions they are qualified for and what additional training or experience is necessary. Individual training plans are reviewed at least twice a year along with the individual's mid-year and final performance review. Programmatically, training is prioritized based on the types of facilities being regulated and the level of training among the available staff.

6. Identify any changes to your qualification and training procedure that occurred during the review period.

Training procedure updated April 2014

7. Please identify the technical staff that left your radioactive materials program during the review period and indicate the date they left.

Ken Weaver-Retired July 2010
Patrick Chittum-Resigned September 2011
Phillip Egidi-Resigned October 2011
James DeWolfe-Resigned July 2012
Megan Brown-Resigned November 2013

8. List any vacant positions in your radioactive materials program, the length of time each position has been vacant, and a brief summary of efforts to fill the vacancy.

The program currently has one vacancy for an inspector/license reviewer. This position has been vacant since November 2013. We have hired Derek Bailey on a part-time basis to temporarily fill that position. He was unable to fill that position on a permanent basis until he completed his Master's Degree in May 2014. At that time, we will recruit for a full-time replacement for that position.

9. For Agreement States, does your program have an oversight board or committee which provides direction to the program and is composed of licensees and/or members of the public? If so, please describe the procedures used to avoid any potential conflict of interest.

As required by Colorado Radiation Control Act, the Radiation Program has a nine member, governor appointed committee which provides technical guidance and advice to the program. The statute requires that there be three representatives from each of the following areas: higher education, healing arts, and industry, and that no more than four be from any one political party. There is not a specific requirement that the representatives be licensees, although five of the current committee members are Colorado licensees, one is an NRC licensee, and the remainder are non-licensees (but consult with licensees or have previously worked for a licensee). The committee is governed by bylaws which address conflict of interest issues.

II. Status of Materials Inspection Program

10. Please identify individual licensees or categories of licensees the State is inspecting less frequently than called for in NRC's Inspection Manual Chapter (IMC) 2800 and explain the reason for the difference. The list only needs to include the following information: license category or licensee name and license number, your inspection interval, and rationale for the difference.

None

11. Please provide the number of routine inspections of Priority 1, 2, and 3 licensees, as defined in IMC 2800 and the number of initial inspections that were completed during each year of the review period.

Year	Routine Inspections (Priority 1,2,3)	Initial Inspections
2010	66	9
2011	60	20
2012	69	6
2013	74	12

2014	5	1
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12. Please submit a table, or a computer printout, that identifies inspections of Priority 1, 2, and 3 licensees and initial inspections that were conducted overdue.

Year	Licensee Name	Number	Priority	Last Inspection	Date Due	Date Performed	Time overdue	Date Findings Issued.
2010	Cotter - Schwartzwalder	369-03 Terminated	2? (2.C)??	Waiting for file – in storage	4/1/10	10/20/10	6 months late	
	CSMRI-Creekside	617-01	1?? (14.A)?	2/25/09	5/25/10	10/18/10	5 months late	10/21/10
2011	NDE Services	406-01	1 (3.O)	4/6/10	7/6/11	7/7/11	1 day	7/7/11
	Spectra Tech	1168-01	3 (3.N)	Initial, License Issued 1/12/10	1/12/11	10/23/12	21 months late (See note#1)	10/23/12
2012	Scientific Drilling	1200-01	5 (3.M)	Initial, License Issued 9/8/11	9/8/12	10/9/12	31 days late (See note #2)	10/9/12
2013	none							
2014	none							

Note #1. D&D licensee. To date, this licensee has no RAMs, and no work involving CO license. A license condition was added that requires licensee to notify us before starting work.

Note #2. Attempted inspections before due date - licensee out of state.

13. Please submit a table or computer printout that identifies any Priority 1, 2, and 3 licensees and initial inspections that are currently overdue, per IMC 2800. At a minimum, the list should include the same information for each overdue inspection provided for Question 12 plus your action plan for completing the inspection. Also include your plan for completing the overdue inspections.

None

14. Please provide the number of reciprocity licensees that were candidates for inspection per year as described in IMC 1220 and indicate the number of reciprocity inspections of candidate licensees that were completed each year during the review period.

	Candidate Licensees (Priority 1-3)	Inspections Completed (1-3)
2010	18	5
2011	18	5
2012	24	7
2013	26	8

2014	12	2
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III. Technical Quality of Inspections

15. What, if any, changes were made to your written inspection procedures during the reporting period?

Our inspection manual was revised in 2013. Significant changes include:

- Inspection frequencies were reduced to match NRC's. Previously, some license categories were inspected more frequently than the minimum NRC requirement.
- Language was changed to emphasize the completion of inspections on or before the inspection due date to promote more timely inspections.
- Language was changed to emphasize the completion of reciprocity inspections.
- For initial inspections, a requirement was added to complete an on-site inspection within 12 months of issuance. Previously, the initial inspection could be extended past 12 months if the licensee never possessed radioactive materials or conducted work under the provisions of the license.
- Language was changed to emphasize the importance of notifying the inspection lead when a licensee makes a significant change to licensed activities through the amendment process. For example, if a medical licensee requests an amendment to add an HDR unit, the inspection lead should be notified to ensure the proper inspection frequency is entered into the database.

16. Prepare a table showing the number and types of supervisory accompaniments made during the review period. Include:

	Inspector	Supervisor or Inspection Lead	License Category	Date
2010				
	James DeWolfe	Ed Stroud	7.C	2/17/10
	Phill Peterson	Ed Stroud	3.P	3/18/10
	Mark Dater	Ed Stroud	3.N	5/4/10
	Phill Peterson	Ed Stroud	3.C	9/30/10
	Chas Etherton	Ed Stroud	3.O	11/23/10
2011				
	Mark Dater	Ed Stroud	5.A	1/5/11
	Megan Brown	Ed Stroud	3.P	3/8/11
	Mark Dater	Ed Stroud	5.A	4/8/11
	Patrick Chittum	Ed Stroud	3.P	5/10/11
	Chas Etherton	Ed Stroud	7.C	6/15/11
	Phill Peterson	Ed Stroud	3.O	7/20/11
	James DeWolfe	Ed Stroud	3.C	10/5/11
	Ed Stroud	Jennifer Opila	7.C	11/16/11
2012				
	Chas Etherton	Ed Stroud	7.C	2/13/12
	James DeWolfe	Ed Stroud	7.A	3/2/12
	Megan Brown	Ed Stroud	7.C	5/2/12
	James DeWolfe	Ed Stroud	3.O	5/9/12

	Carrie Romanchek	Ed Stroud	3.P	6/6/12
	Edgar Ethington	Ed Stroud	2.A2	8/15/12
	James Jarvis	Ed Stroud	3.B	8/30/12
	Ed Stroud	James Jarvis	3.B	8/30/12
	Phill Peterson	Ed Stroud	3.L + 3.N	10/15/12
	Mark Dater	Ed Stroud	3.C + 3.N	10/4/12
	Phill Peterson	Ed Stroud	7.C	12/12/12
2013				
	Phill Peterson	Ed Stroud	3.B	1/8/13
	Chas Etherton	Ed Stroud	7.C	1/16/13
	Megan Brown	Ed Stroud	7.C	1/24/13
	Cheri Hall	Ed Stroud	3.P	1/30/13
	Carrie Romanchek	Ed Stroud	3.B	3/21/13
	Shiya Wang	Ed Stroud	3.P	4/25/13
	Phill Peterson	Ed Stroud	7.C	9/10/13
	James Jarvis	Ed Stroud	7.C	9/19/13
	Ed Stroud	Phillip Peterson	7.C	10/3/13
	Edgar Ethington	Ed Stroud	3.P	10/24/13
	Cheri Hall	Ed Stroud	7.C	11/1/13
	Mark Dater	Ed Stroud	7.C (Vet)	12/4/13

17. Describe or provide an update on your instrumentation, methods of calibration, and laboratory capabilities. Are all instruments properly calibrated at the present time? Were there sufficient calibrated instruments available throughout the review period?

Colorado has the following instrumentation currently available to use for inspections:

- 4 Bicorn micro-rem meters to measure dose rate
- 1 Eberline PRM-7 meter to measure dose rate
- 2 Inovision 451B meters to measure dose rate
- 10 Ludlum model 3 meters with GM probes to measure contamination
- 1 Ludlum model 3 meter with a 2x2 NaI detector
- 3 Ludlum model 19 meters to measure dose rate
- 4 Ludlum model 2 meters with GM probes to measure contamination
- 2 Ludlum model 9 meters with ion chambers to measure dose rate
- 1 Ludlum model 2350 meter with multiple probes
- 1 Ludlum model 2241 scaler with multiple probes
- 1 Ludlum model 12-4 meter to measure neutron dose rate
- 1 Ludlum model 12 meters with NaI probe to measure contamination
- 3 Ludlum model 12 meters with GM probe to measure alpha contamination
- 1 Ludlum model 12 meter with multiple probes
- 1 Ludlum model 15 meter to measure neutron dose rate
- 2 SE International Inspector + meters to measure dose rate and contamination
- 1 Victoreen 450B with ion chamber to measure dose rate

- 1 Victoreen 290 with GM probe to measure contamination
- 1 FLIR Radiation, Inc. IdentiFinder 2 for field isotope identification
- 1 Berkeley SAM for field isotope identification
- 1 ThermoFisher RadEye PRD-ER meter to measure dose rate

All meters are calibrated on an annual basis and all have been calibrated within the last year.

Meters are calibrated at Ludlum Measurements, Inc. or at ThermoFisher. Any meter found to be out of calibration or not working properly is removed from service until required calibration or maintenance is performed. Any wipe tests needing to be analyzed by liquid scintillation detector or gamma spectroscopy are tested by the radiochemistry laboratory at the Laboratory Services Division within CDPHE. There are enough calibrated instruments with the ability to detect both contamination and dose rate available throughout the review period.

IV. Technical Quality of Licensing Actions

18. How many specific radioactive material licenses does your program regulate at this time?

332

19. Please identify any major, unusual, or complex licenses which were issued, received a major amendment, were terminated, decommissioned, submitted a bankruptcy notification or renewed in this period.

- Issued New: Cardinal Health 414, LLC, CO 1219-01, Energy Fuels Resources Corporation CO 1170-01
- Renewal: Colorado State University, CO 002-19; Clean Harbors Deer Trail LLC, CO 1102-01
- Major Amendment: University of Colorado Denver, CO 835-01; Rocky Mountain Gamma Knife Center, LLC, CO 857-01; St Anthony Hospital - Centura Health, CO 152-01
- Bankruptcy: Luca Technologies LLC, CO 1061-01; MDTI, CO 987-03;
- Terminated: Colorado School of Mines Research Institute, CO 617-01; State of Colorado/CSM, CO 1206-01;

20. Discuss any variances in licensing policies and procedures or exemptions from the regulations granted during the review period.

- Clean Harbors Deer Trail LLC, CO 1102-01: from the CHDT Decision Analysis; December 10, 2010
 - Co-disposal of hazardous wastes and radioactive materials

Section 14.25.1.11 of the Regulations requires that only wastes containing or contaminated with radioactive material be disposed of at the site. Section 14.27 grants the Department the authority to authorize provisions other than those set forth in sections 14.24 through 14.26 for the segregation and disposal of wastes on a specific basis, if it finds reasonable assurance of compliance with the performance objectives of Part 14 of the Regulations.

Clean Harbors submitted a report to the Department prepared by MFG, Inc. and dated

July 28, 2005 that specifically discusses the suitability of the site and design for disposal of radioactive materials. This report evaluated the hazards of co-disposal of radioactive and hazardous wastes at the Deer Trail Facility. The conclusion of this evaluation is that the stabilization of treated hazardous waste prevents intermingling of hazardous and radioactive constituents. Additionally, any intermingling of landfill leachate and waste in the landfill will not increase the mobility of radioactive constituents because of the pH of the leachate (approximately 6.0) and the presence of high carbonates.

Based on this information, the Department believes that co-disposal of hazardous and radioactive wastes will not affect compliance with the performance objectives of Part 14 of the Regulations and therefore is granting an exemption to the segregation requirements of section 14.25.1.11.

- Inadvertent Intrusion

Section 14.11.4 of the Regulations requires the applicant's proposed disposal site, disposal site design, land disposal facility operations, including equipment, facilities, and procedures, disposal site closure, and post-closure institutional control to be adequate to protect the public health and safety in that they will provide reasonable assurance that individuals are protected from inadvertently intruding into the disposal site and occupying the site or contacting the waste at any time after active institutional controls over the disposal site are removed.

The Department has granted an exemption to the requirements of section 14.11.4 and has not required the cap design at the facility to be redesigned to meet an inadvertent intruder scenario. The Department's assessment follows the UMTRA approach, which requires controls for 1,000 years. UMTRA did not require intruder analysis on its disposal sites. Since the Colorado definition of radioactive waste is for high-activity materials, i.e., those that can cause acute effects, it is appropriate that Part 14 has the requirement, but since that is not what is being accepted, it is appropriate to waive the requirement.

Because the classification of the materials being considered for Deer Trail are only a subset of Class A waste, and are limited in their physical, chemical, and radiological properties, a graded approach was deemed appropriate. The properties of the materials are more consistent with the requirements for uranium mill tailings rather than low-level waste. Additionally, many of the requirements that need to be met for low-level waste are also required, or have similar requirements, in the RCRA permit for the facility. Because the physical, chemical, and radiological characteristics of the proposed materials are constrained, an additional evaluation is not warranted.

- Insurance mechanism for Financial Assurance

Section 3.9 of the Regulations requires the applicant to establish Department-approved financial assurance warranties for decommissioning and long-term care. The financial assurance requirements for radioactive waste disposal facilities are outlined in section 14.31.

Clean Harbors has met the requirements for financial assurance by revising the insurance policy previously approved by the Department for the CHWA permit. However, insurance is not a form of financial assurance that is routinely used under the

radioactive materials regulations.

Pursuant to section 14.31.7 of the Regulations we are approving Clean Harbors insurance policy. The Department has determined that the insurance policy as revised provides equivalent protection required by sections of 3.9 and 14.31.

- Exemption to Land Ownership Requirements

Section 14.28.1 of the Regulations requires that land disposal be permitted only on land owned by the federal or a state government. Section 1.5.1 allows the Department to grant exemptions from the requirements of the regulations. If the Department is to grant an exemption to the land ownership requirements, part 11 of the Regulations requires the applicant to demonstrate a degree of control of the site equivalent to that which would be achieved by government ownership of the site. To demonstrate this degree of control, the application must provide the following:

- financial assurance in the form of a long term care warranty (11.3.1)
- a trust agreement with the department giving the department exclusive control over the licensee's long term care funds (11.3.2)
- an institutional control program (11.3.3)
- restrictive covenants (11.3.4)
- deed annotations with the county clerk and recorder as upon closure of each landfill cell (11.3.5)
- an easement granting to the Department unlimited right to access the property (11.3.6)
- as-built drawings (11.3.7)
- after completion of decommissioning and decontamination activities, transfer records pertaining to the disposal of wastes to local governments and the Department (11.3.8)

The Department is granting an exemption under section 1.5.1 to the land ownership requirements by allowing the facility to be licensed on land owned by Clean Harbors. Clean Harbors has submitted documentation describing an adequate degree of control over the site by providing the information required in Part 11. The financial assurance, institutional control program, and restrictive covenants were required to be accepted prior to issuance of the license. The Department is exempting under section 1.5.1 the requirement for a trust agreement found in section 11.3.2 because the Department is named as the beneficiary on the insurance policy provided for long-term care. The remaining items will be required as the facility disposes of radioactive materials and upon completion of decontamination and decommissioning of the materials upon closure.

- Children's Hospital Colorado, CO 075-02: Granted an exemption for caregiver dose which exceeds the 500 mrem regulatory limit from Section 4.14 of the regulations. Exemption is consistent with the "NRC Regulatory Issue Summary 2005-24 Control Of Radiation Dose To Visitors Of Hospital Patients" and "NRC Regulatory Issue Summary 2006-18 Requesting Exemption From The Public Dose Limits For Certain Caregivers Of Hospital Patients"
 - The following Conditions were added to the license:

"The licensee is granted a waiver to the requirements of Section 4.14 of the Regulations for designated patient caregivers of patients undergoing I-131 MIBG treatment. In lieu of these requirements, the licensee shall implement the following conditions:

 - Any designated patient caregiver who is expected to exceed public dose limits

shall sign the caregiver contract, be issued a dosimeter, have a daily bioassay performed to evaluate any potential uptake, and receive training as outlined in the November 26, 2012, March 8, 2013, and April 18, 2013 correspondences; and

- The Total Effective Dose Equivalent for any parent caregiver shall not exceed 20 mSv (2 rem)."
- Tri-State Generation and Transmission Association, Inc., CO 343-01: Allowed for a less frequent shutter test frequency by adding the following condition to the license, "Fixed gauges mounted approximately 10-12 feet below grade on the inside walls of coal hoppers shall be tested for the proper operation of the on-off mechanism (shutter) and indicator at intervals not to exceed three (3) years." This resulted from a request based on the safety of entering coal hoppers.
- Platte River Power Authority, CO 507-01: Exemption for leak testing and shutter test requirement frequency for Gauge suspended 80 feet above any area used by employees.

Added the following conditions:

- "The licensee is granted an exemption from the 3 year leak testing and 6 month shutter test requirements for the Texas Nuclear Model 5192 fixed gauge located on the telescopic coal chute only. In lieu of these requirements, the licensee shall implement the following conditions:
 - The Texas Nuclear Model 5192 fixed gauge located on the telescopic coal chute shall be tested for leakage and/or contamination in accordance with the requirements of Part 4.16 of the Regulations and tested for proper operation of the on-off mechanism (shutter) and indicator, if any, at intervals not to exceed 6 years, in accordance with the variance request submitted August 1, 2013.
 - The Texas Nuclear Model 5192 fixed gauge located on the telescopic coal chute shall be visually inspected to comply with the physical inventory requirements of License Condition 14.A, and to verify the physical integrity of the gauge at intervals not to exceed 6 months.
 - If routine maintenance at the facility requires personnel to be in the close vicinity of the gauge, The Texas Nuclear Model 5192 fixed gauge located on the telescopic coal chute shall be tested for leakage and/or contamination in accordance with the requirements of Part 4.16 of the Regulations and tested for proper operation of the on-off mechanism (shutter) and indicator, if any, at the time of that maintenance."

21. What, if any, changes were made in your written licensing procedures (new procedures, updates, policy memoranda, etc.) during the reporting period?

Based on the 2010 IMPEP changes were made to the pre-licensing, termination and sensitive document handling procedures. See Section A for a description of those changes. Additionally, the license process document was updated in August 2013.

22. Identify by licensee name and license number any renewal applications that have been pending for one year or more. Please indicate why these reviews have been delayed and describe your action plan to reduce the backlog.

NONE

V. Technical Quality of Incident and Allegation Activities

23. For Agreement States, please provide a list of any reportable incidents not previously submitted to NRC (See Procedure SA-300, *Reporting Material Events*, for additional guidance, OMB clearance number 3150-0178). The list should be in the following format:

<u>Licensee Name</u>	<u>License #</u>	<u>Date of Incident/Report</u>	<u>Type of Incident</u>
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None

24. Identify any changes to your procedures for responding to incidents and allegations that occurred during the period of this review.

Prior to the 2010 IMPEP, inspectors determined if an on-site visit was needed to fully investigate an incident or allegation on a case-by-case basis. Following the last IMPEP, procedures were changed to emphasize the importance of performing an on-site visit as part of an investigation. Consequently, an on-site visit is now a routine part of all but the most minor investigations. Additionally, the program has developed a number of field guides to assist staff in responding to incidents and allegations.

C. NON-COMMON PERFORMANCE INDICATORS

I. Compatibility Requirements

25. Please list all currently effective legislation that affects the radiation control program. Denote any legislation that was enacted or amended during the review period.

The Colorado Radiation Control Act (25-11-101, et.seq.) provides the authority for the program, consistent with the State Agreement. The state uses surface and groundwater standards authorized through the Colorado Water Quality Control Act (24-4-103) and consults with the Department of Natural Resources Division of Reclamation, Mining and Safety (DRMS) to coordinate groundwater reclamation requirements for in-situ mining as prescribed in the Colorado Mined Land Reclamation Act (34-32-103,et. seq.) modified in 2010. This provision does not provide any AEA or Radiation Control Act authority to the DRMS.

Changes to the Colorado Radiation Control Act since 2002 include:

2002 HB02-1408 - Concerning Additional Requirements for Shipments of Certain Radioactive Wastes for Disposal inside Colorado. This was initiated by a citizen group directed at the Cotter facility (conventional U mill) proposal to receive Maywood Superfund waste. The changes included added definitions, additional public process requirements, added timelines and decision process modifications.

2003 HB03-1358 - Concerning Additional Requirements Relating to Radioactive Classified Waste for Disposal.

Revision to HB02-1408 based on activist and Cotter perspectives on prior bill.

2010 HB 10-1149 - Uranium Processing Accountability Act, Concerning the Regulation Prior to Disposal of Sources that Emit Radiation. This was initiated by anti-uranium activists and directed at forcing closure of Cotter mill; added restrictions on approval of applications, groundwater cleanup and possible in-situ operations.

2010 HB 10-1348 - Concerning Increased Regulatory Authority Regarding Radioactive Materials. Initiated by Department to address major changes in enforcement process, radiation machine regulation, and fees. Changes related to these bills were incorporated into regulations in 2010-11. Both the statutory and regulatory changes have been reviewed and commented on by the NRC.

In January 2014, external stakeholders indicated their intent to propose changes to the RCA, and in particular, changes to those areas impacting uranium and thorium processing facilities. Radiation Program staff are continuing to work with department management and legislative liaison personnel with the intent of addressing prior NRC comments. The legislative changes are in process.

26. Are your regulations subject to a "Sunset" or equivalent law? If so, explain and include the next expiration date for your regulations.

Under the Colorado Administrative Procedure Act (APA), all regulations in the state expire each May 15 of every year unless that expiration is postponed by the legislature (§24-4-103(8)(c)(I)). Every year, the legislature initiates a bill postponing nearly all regulatory expirations, including those of the Colorado Radiation Program. Those regulations required for compliance with federal requirements are typically renewed annually, although this is at the discretion and purview of the legislature. Historically, the Colorado Rules and Regulations Pertaining to Radiation Control have always been approved each year

27. Please review and verify that the information in the enclosed State Regulation Status (SRS) sheet is correct. For those regulations that have not been adopted by the State, explain why they were not adopted, and discuss actions being taken to adopt them. If legally binding requirements were used in lieu of regulations and they have not been reviewed by NRC for compatibility, please describe their use.

The State Regulation Status sheet (dated 01/14/14) appears to be current. During the review period, Colorado has amended nine regulatory parts to address NRC Regulatory Action Tracking System (RATS) provisions, NRC comments, statutory changes, and programmatic needs and currently has initiatives to amend several other regulatory parts.

A rulemaking pertaining to uranium and thorium processing (Colorado Part 18) was initiated in 2013, but is on hold, pending potential legislative changes (see question 25 above). Uranium related changes to other associated regulatory parts (Part 1, Part 3) are also on hold pending resolution of potential legislative changes. It is not known whether the legislative changes will be completed during the legislative cycle ending July 1, 2014. The proposed changes to the rule would address prior NRC comments.

A rulemaking for Colorado Part 3 (licensing of radioactive material excluding items pertaining to uranium and thorium processing) was initiated in January 2014. As of January 2014, NRC is currently reviewing the proposed changes. The proposed changes to Part 3 are intended to address regulatory provisions not due until 2015 as well as a limited number of NRC comments. A final rulemaking hearing for Part 3 is scheduled for April 16, 2014, with an expected effective date of May-June 2014.

A rulemaking for Colorado Part 17 (transportation of radioactive material) was initiated in March 2014. As of March 2014, the proposed changes have been submitted to NRC for review. The proposed changes address items not due until 2015, and will also address prior NRC comments. A request for rulemaking is scheduled for April 16, 2014, with the final rulemaking hearing anticipated in June 2014.

The final rule has an expected effective date of July-August 2014.

A rulemaking for Colorado Part 7 (use of radionuclides in the healing arts) will be initiated to address one NRC comment once NRC issues a final rule for 10 CFR Part 35.

28. If you have not adopted all amendments within three years from the date of NRC rule promulgation, briefly describe your State's procedures for amending regulations in order to maintain compatibility with the NRC, showing the normal length of time anticipated to complete each step.

During the review period a new regulatory coordinator staff was appointed. This resulted in some transition time to initiate rule changes.

Also during the review period, some aspects of Colorado's process for amending regulations changed. Several Executive Orders (EO's) initiated by Colorado's Governor require additional pre-planning and scheduling for the coming calendar year and notification of local governments prior to initiating any rule change. Further, these EO's require periodic review of all regulations on a 5 to 7 year cycle. Colorado is working these reviews, beginning in 2014, with a number of reviews conducted each year. These reviews are in addition to the actual rule changes required for compatibility with NRC requirements.

Rule changes due in 2014 and beyond are currently on schedule, and pending potential legislative changes and or availability of CRCPD Suggested State Regulations. Where possible some rule changes due in 2015 are being initiated in 2014. Amendments to address prior NRC comments are currently in-process (discussed in item 27 above).

II. Sealed Source and Device (SS&D) Evaluation Program

29. Prepare a table listing new and amended (including transfers to inactive status) SS&D registrations of sources and devices issued during the review period. The table heading should be:

<u>SS&D Registry Number</u>	<u>Manufacturer, Distributor or Custom User</u>	<u>Product Type or Use</u>	<u>Date Issued</u>	<u>Type of Action</u>
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See Attachment D- CO SS&D Certificates

30. Please include information on the following questions in Section A, as they apply to the SS&D Program:

Technical Staffing and Training - Questions 2-9

See Section B responses. The following staff members have been trained to perform SS&D evaluations: Jennifer Opila, James Grice, Ed Stroud, James Jarvis, Phillip Peterson and Megan Brown.

Technical Quality of Licensing Actions - Questions 18-22

See Section B responses. SS&D actions are handled as part of the overall license program.

Technical Quality of Incident and Allegation Activities - Questions 23-24

See Section B responses. SS&D actions are handled as part of the overall incident and allegation program.

III. Low-level Radioactive Waste Disposal Program

31. Please include information on the following questions in Section A, as they apply to the Low-Level Radioactive Waste Disposal Program:

See Section B responses. We have one potential Low-Level radioactive waste disposal license, Clean Harbors Deer Trail, which is authorized to accept for disposal NORM and TENORM. This licensee is regulated as any other licensee.

Technical Staffing and Training - Questions 2-9
Status of Materials Inspection Program - Questions 10-14
Technical Quality of Inspections - Questions 15-17
Technical Quality of Licensing Actions - Questions 18-22
Technical Quality of Incident and Allegation Activities - Questions 23-24

IV. Uranium Recovery Program

32. Please include information on the following questions in Section A, as they apply to the Uranium Recovery Program:

See Section B responses. All Uranium Recovery Licensees are regulated as all other licensees.

Technical Staffing and Training - Questions 2-9
Status of Materials Inspection Program - Questions 10-14
Technical Quality of Inspections - Questions 15-17
Technical Quality of Licensing Actions - Questions 18-22
Technical Quality of Incident and Allegation Activities - Questions 23-24

Current as of 3/24/14															
		Stroud	Jarvis	Opila	Ethington	Dater	Grice	Etherton	DeWolfe	Peterson	Brown	Romanchek	Wang	Hall	
Formal Education															
BS in Health Physics or Related field		X	X	X	X		X	X	X	X	X		X	X	
OSHA 40-Hour		X	X	X	X	X	X	X	4/09	X	X	X	X	X	
NRC Introductory Health Physics	H-117	EQ	EQ	EQ	2005	EQ	EQ	EQ	EQ	EQ	EQ	EQ	EQ	EQ	
NRC Fundamental Health Physics I & II	H-122	EQ	EQ	EQ	2007	1/11	EQ	EQ	8/09	EQ	EQ	8/12	8/12	EQ	
NRC Fundamental Health Physics III	H-123									EQ	EQ	12/12	12/12	EQ	
NRC Health Physics Technology	H-201	EQ	EQ	EQ		10/09	EQ	4/13	EQ	8/11	10/10	P14		EQ	
NRC Licensing Practices and Procedures	G-109	EQ	2003	2004	2005	2007	2007	OJT	OJT	OJT	OJT	OJT	OJT	OJT	
NRC Inspection Procedures	G-108	1996	2003	EQ	2006	2007	2007	EQ/OJT	EQ/OJT	4/10	9/11	10/12	3/13	9/12	
NRC Diagnostic & Therapeutic Nuclear Medicine	H-304	1996	EQ	2005		8/10	3/08	3/09	EQ	3/10	8/11	12/13		8/13	
NRC Brachytherapy and Gamma Knife	H-313	2002	EQ	2006		3/11	7/08	8/12	12/09	8/13		P14		6/13	
NRC Safety Aspects of Industrial Radiography	H-305	1995	2005	2006		12/07	9/09	9/09	10/10	2/11	3/12	10/12	P14	1/14	
NRC Transportation of Radioactive Materials	H-308	1995, 2004	6/08	EQ		9/10	EQ	EQ	6/10	3/12		P14	3/13	6/13	
NRC Safety Aspects of Well Logging	H-314	1997	2004	2008		11/07	10/10	10/11	2012	4/12	5/13	P14	P14	9/13	
NRC Security Systems and Principles	S-201	2006	2006	2006		4/08	1/09	3/10	8/10	6/11	5/12	5/12		5/13	
NRC Sealed Source and Device Evaluation		1995	2003	5/09		5/09	5/09			9/11	9/11	4/14		4/14	

Inspector Certifications 12/9/13

Regulated Facility Types	Brown	Dater	DeWolfe	Etherton	Ethington	Grice	Hall	Jarvis	Opila	Peterson	Romanchek	Stroud	Wang
2.A.2 Source material (SM) (Uranium Recovery)					X(a)			X				X	
2.C SM other					X(a)	X		X				X	
3.B Commercial distribution (SSD)								X	X	X		X	
3.C Nuclear pharmacy			X	X		X		X	X	X		X	
3.D Radiopharmaceutical distribution		X		X		X		X	X	X		X	
3.E Self-shielded irradiators	X	X		X				X	X	X		X	
3.F Irradiator – Panoramic < 10K Ci				X				X	X	X		X	
3.G Irradiator – Panoramic >10K Ci (none in CO)	na	na	na	na	na	na	na	na	na	na	na	X	na
3.L Broad Scope R&D				X				X	X	X		X	
3.M R&D (No distribution)		X	X	X		X		X	X	X		X	
3.N Service providers		X	X	X	X(b)			X	X	X		X	
3.O Industrial radiographers		X		X				X	X	X	X	X	
3.P/3.Q Portable + fixed Gauge	X	X	X	X	X	X	X	X	X	X	X	X	X
4.A Waste Disposal - Land								X	X	X		X	
4.B & 4.C Waste receipt & transfer								X	X			X	
5.A, B. Well logging & Tracer Studies		X						X		X		X	
7.A Sealed source teletherapy (Gamma Knife)			X					X				X	
7.B Broad scope human/vet R&D				X				X				X	
7.C Human Use – Diagnostic	X	X	X	X		X	X	X	X	X		X	
7.C Human Use-Therapeutic (unsealed > 33 mCi I-131)	X		X	X		X		X	X	X		X	
7.C Brachytherapy	X		X	X		X		X	X			X	
7.C HDR only	X		X	X		X		X	X			X	
7.C Vet Use		X		X		X		X	X	X	X	X	
14.A Decommissioning & Reclamation					X(a)							X	
17.A General license	X	X	X	X	X	X		X	X	X		X	
17.B In-vitro				X		X		X	X	X		X	
Reciprocity Request Approvals	X	X	X	X	X	X	X	X	X	X	X	X	X
Provisional License Inspection	X	X	X	X		X	X	X	X	X		X	X
IC Security Inspections	X	X	X	X				X	X	X	X	X	

Note: () represents the number of accompanied inspections estimated for certification.

(a) Geophysical Evaluations, (b) D&D Activities

Docket #	Type of Action	Licensee Name	Category	License #	Certificate Number	Product Type or Use	Primary	Secondary	Date Signed
	Amendment	Thermo MF Physics		803-02	CO-1012-D-101-S	Neutron Generator and Neutron Generator Tubes			01/02/2009
	New	Thermo MF Physics		803-02	Co-1012-D-103-S	Neutron Generator Tube			03/10/2009
	Amendment	Particle Measuring Systems, Inc.		1073-01	CO-1217-D-101-G	Ion Mobility Spectrometry (IMS) Cell			09/11/2006
	New	Particle Measuring Systems, Inc.		1073-01	CO-1217-D-102-G	Ion Mobility Spectrometry (IMS) Cell			03/05/2007
	Amendment	Particle Measuring Systems, Inc.		1073-01	CO-1217-D-102-G	Ion Mobility Spectrometry (IMS) Cell			05/23/2007
	Amendment	Particle Measuring Systems, Inc.		1073-01	CO-1217-D-102-G	Ion Mobility Spectrometry (IMS) Cell			09/01/2007
	Amendment	Particle Measuring Systems, Inc.		1073-01	CO-1217-D-102-G	Ion Mobility Spectrometry (IMS) Cell			11/15/2007
	Amendment	Particle Measuring Systems, Inc.	9.A	1073-01	CO-1217-D-102-G	Ion Mobility Spectrometry (IMS) Cell			12/18/2009
	Amendment	Hazen Research		1073-01	CO-1230-D-101-S	Neutron Generator and Neutron Generator Tubes			08/06/2007
	Amendment	Hazen Research	9.A	1098-01	CO-1230-D-101-S	Neutron Generator and Neutron Generator Tubes			06/16/2009
10195	Amendment	Thermo MF Physics	9.A	803-02	CO-1012-D-101-S	Neutron Generator and Neutron Generator Tubes	PP	JG	02/02/2012
10196	Amendment	Thermo MF Physics	9.A	803-02	CO-1012-D-103-S	Neutron Generator Tube	PP	JG	02/02/2012
10759	Amendment	Thermo MF Physics	9.A	803-02	CO-1012-D-101-S	Neutron Generator and Neutron Generator Tubes	PP	JG	04/18/2013
10760	Amendment	Thermo MF Physics	9.A	803-02	CO-1012-D-103-S	Neutron Generator Tube	PP	JG	04/18/2013
11090	Amendment	Particle Measuring Systems, Inc.	9.A	1073-01	CO-1012-D-102-G	Ion Mobility Spectrometry (IMS) Cell	PP	JG	12/31/2013

Licensee Name	License #	Certificate Number	Product Type or Use	Type of Action	Docket #	Primary	Secondary	Date Signed	Date Sent to NRC	Notes			
Amersham Holdings, Inc		CO-136-S-801-S	Beta Source	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-136-S-270-S			
BK Sweeney Manufacturing		CO-8251-D-811-G	Beta Gauge	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0624-D-811-G			
BK Sweeney Manufacturing		CO-8251-D-810-G	Beta Gauge	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0624-D-810-G			
BK Sweeney Manufacturing		CO-8251-D-809-G	Beta Gauge	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0624-D-809-G			
BK Sweeney Manufacturing		CO-8251-D-808-G	Beta Gauge	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0624-D-808-G			
BK Sweeney Manufacturing		CO-8251-D-807-G	Beta Gauge	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0624-D-807-G			
BK Sweeney Manufacturing		CO-8251-D-806-G	Beta Gauge	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0624-D-806-G			
BK Sweeney Manufacturing		CO-8251-D-805-G	Beta Gauge	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0624-D-805-G			
BK Sweeney Manufacturing		CO-8251-D-803-G	Beta Gauge	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0624-D-803-G			
BK Sweeney Manufacturing		CO-8251-D-802-G	Beta Gauge	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0624-D-802-G			
BK Sweeney Manufacturing		CO-8251-D-801-G	Beta Gauge	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0624-D-801-G			
BK Sweeney Manufacturing		CO-8251-D-804-G	Beta Gauge	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0624-D-804-G			
Bondar-Clegg & Co	496-01	CO-8220-D-801-S	Discrete X-ray Fluorescence Analyzer	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0189-D-801-S			
Boulder Scientific Company	11(6139)-01	CO-0837-D-801-S	Beryllium Analyzer	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-175-D-101-S			
Compagne Oris Industrie S.A.		CO-8180-S-801-S	Gamma Irradiator	Inactivate						No changes needed			
Du Pont Merck Pharmaceuticals Company	843-01	CO-0476-S-801-S	Beta Source	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0476-S-165-S			
Fire Alert Company		CO-8181-D-802-U	Detector)	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0289-D-801-U			
Fire Alert Company		CO-8181-D-801-S	Ion Generator, Smoke Detector	Inactivate		Megan Brown	Jennifer Opila			No changes needed			
Fyrex, Inc.		CO-8182-D-801-S	Ion Generator, Smoke Detector	Inactivate		Megan Brown	Jennifer Opila			No changes needed			
Kaman Sciences Corporation		CO-8221-D-813-S	Oil Well Logging	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0411-D-813-S			
Kaman Sciences Corporation		CO-8221-D-812-S	Gamma Gauges	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes NR-0411-D-812-S			
Kaman Sciences Corporation		CO-8221-D-811-S	Oil Well Logging	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0411-D-811-S			
Kaman Sciences Corporation		CO-8221-D-810-S	Oil Well Logging	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0411-D-810-S			
Kaman Sciences Corporation		CO-8221-D-809-S	General Neutron Source Applications	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0411-D-809-S			
Kaman Sciences Corporation		CO-8221-D-808-S	General Neutron Source Applications	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0411-D-808-S			
Kaman Sciences Corporation		CO-8221-D-807-S	General Neutron Source Applications	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0411-D-807-S			
Kaman Sciences Corporation		CO-8221-D-806-S	General Neutron Source Applications	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0411-D-806-S			
Kaman Sciences Corporation		CO-8221-D-805-S	General Neutron Source Applications	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0411-D-805-S			
Kaman Sciences Corporation		CO-8221-D-804-S	General Neutron Source Applications	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0411-D-804-S			
Kaman Sciences Corporation		CO-8221-D-802-S	General Neutron Source Applications	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0411-D-802-S			
Kaman Sciences Corporation		CO-8221-D-803-S	General Neutron Source Applications	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0411-D-803-S			
Kaman Sciences Corporation		CO-8221-D-801-S	General Neutron Source Applications	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0411-D-801-S			
Louis Ried, Jr.		CO-8183-D-801-S	Smoke Detector	Inactivate						No changes needed			
Ludwig Kronhe Company		CO-8184-D-801-G	Particulate Mass Analyzer	Inactivate						No changes needed			
Mine Safety Appliance Company (MSA Baseline Ind. Subsidiary)		CO-8110-D-801-G	Gas Chromatograph	Inactivate						No changes needed			
Mine Safety Appliance Company (MSA Baseline Ind. Subsidiary)		CO-8110-S-802-S	Gas Chromatography Detector Cell	Inactivate						No changes needed			
Mine Safety Appliance Company (MSA Baseline Ind. Subsidiary)		CO-8110-D-803-G	Field Ion Spectrometer	Inactivate						No changes needed			
Outokumpu Engineering, Inc (Metorex Inc.)	N/A	CO-8186-D-801-B	Pre Con ore sorter/concentrator	Inactivate						Supercedes CO-519-D-101-B			
Outokumpu Engineering, Inc	N/A	CO-8186-D-802-S	Fixed Moisture Density Gauge	Inactivate						Supercedes CO-519-D-102-S			
Outokumpu Engineering, Inc		CO-8186-D-803-S	X-Ray Fluorescence	Inactivate						Supercedes CO-0519-D-103-S			
Particle Measuring Systems, Inc.	1073-01	CO-1217-D-801-G	Ion Mobility Spectrometry detector	Inactivate						Supercedes CO-1217-D-101-G			
Radiation Monitoring Devices, Inc. (RMD Instruments, LLC)		CO-8185-D-801-S	Portable X-Ray Fluorescence Device	Inactivate						No changes needed			
Statitrol Corporation	01-01	CO-8187-D-804-G	Ion Generator, Static Eliminator	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0618-D-802-G			
Statitrol Corporation	01-01	CO-8187-D-803-G	Ion Generator, Smoke Detector	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0618-D-801-G			
Statitrol Corporation	01-01	CO-8187-D-806-E	Fire Detector	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0618-D-804-E			
Statitrol Corporation	01-01	CO-8187-D-805-U	Ion Generator, Smoke Detector	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0618-D-803-U			
Statitrol Corporation	01-01	CO-8187-D-801-E	Gas and Aerosol Detector	Inactivate						Supercedes CO-0618-D-105-E No changes needed in 2013			
Statitrol Corporation	01-01	CO-8187-D-802-E	Fire Detector	Inactivate						No changes needed			
Synacor Pharmaceuticals, Inc	162-05	CO-1113-S-801-S	Therapeutic Brachytherapy Seed	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-1113-S-801-S			
Thermo MF Physics Corporation	803-02	CO-1012-D-801-S	Neutron Generator Accelerator Head	Inactivate						Supercedes CO-1012-D-801-S No changes needed in 2013			
Val-tron, Inc		CO-0660-D-801-U	Ion Generators, Smoke Detectors	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0660-D-801-U			
Vicon Instrument Company		CO-0664-D-801-U	Ion Generators, Smoke Detectors	Inactivate		Megan Brown	Jennifer Opila	01/09/2013	01/23/2013	Supercedes CO-0664-D-801-U			
Wedding and Associates	N/A	CO-8079-S-802-S	Beta Gauge (Air Monitoring)	Inactivate						No changes needed			
Wedding and Associates	N/A	CO-8079-S-801-S	Beta Gauge (Air Monitoring)	Inactivate						No changes needed			