



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

June 11, 2014

MEMORANDUM TO: Marc L. Dapas, Regional Administrator  
Region IV

FROM: Duncan White, Branch Chief */RA/*  
Agreement State Programs Branch  
Division of Materials Safety and State Agreements  
Office of Federal and State Materials  
and Environmental Management Programs

SUBJECT: DRAFT REPORT OF THE INTEGRATED MATERIALS  
PERFORMANCE EVALUATION PROGRAM REVIEW OF THE  
REGION IV RADIOACTIVE MATERIALS PROGRAM

A review team composed of members from the Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission (NRC) Region I and Region III, and the State of Arkansas performed an Integrated Materials Performance Evaluation Program (IMPEP) review of the NRC Region IV radioactive materials program during the week of April 28–May 2, 2014. Enclosed for your review is the draft IMPEP report that documents the review.

The review team's preliminary findings were discussed with you on the last day of the review. The review team's proposed recommendation is that the NRC Region IV radioactive materials program be found adequate to protect public health and safety. The final determination of adequacy of your program, based on the review team's report, is made by a Management Review Board (MRB) composed of NRC managers and an Agreement State program manager, who serves as a liaison to the MRB.

In accordance with procedures for implementation of IMPEP, we are providing you with a copy of the review team's draft report for your review and comment prior to submitting the report to the MRB. Comments are requested within 4 weeks from your receipt of this letter. This schedule will permit the issuance of the final report in a timely manner that will be responsive to your needs.

The team will review your response, make any necessary changes to the report, and issue it to the MRB as a proposed final report. Coordinating with your staff, I scheduled the NRC Region IV MRB meeting for Monday, July 28, 2014, from 1:00 to 4:00 p.m. EST.

If you have any questions regarding the enclosed report, please contact me at (301) 415-2598.

Enclosure:  
NRC Region IV Draft IMPEP Report

cc: Linda Howell, Acting Director  
Division of Nuclear Materials Safety

June 11, 2014

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Region IV

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**ML14157A229**

<b>OFFICE</b>	ASPB/MSSA	ASPB/MSSA
<b>NAME</b>	LDimmick LCD	DWhite
<b>DATE</b>	06/9/14	06/11/14

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Memorandum to Marc L. Dapas, Regional Administrator Region IV, dated June 11, 2014

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INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM  
REVIEW OF THE NRC REGION IV RADIOACTIVE MATERIALS PROGRAM

April 28–May 2, 2014

**DRAFT REPORT**

## **EXECUTIVE SUMMARY**

This report presents the results of the Integrated Materials Performance Evaluation Program (IMPEP) review of the U.S. Nuclear Regulatory Commission (NRC) Region IV materials program. The review was conducted during the period of April 28– May 2, 2014, by a review team composed of technical staff members from the NRC and the State of Arkansas.

Based on the results of this review, Region IV's performance was found satisfactory for all six indicators reviewed. The findings for the indicators remain unchanged from the previous two IMPEP reviews. The review team did not make any recommendations.

Accordingly, the review team recommends that the NRC Region IV materials program is adequate to protect public health and safety. The review team recommends that the next IMPEP review take place in approximately 5 years.

## 1.0 INTRODUCTION

This report presents the results of the review of the U.S. Nuclear Regulatory Commission (NRC) Region IV radioactive materials program. The review was conducted during the period of April 28–May 2, 2014, by a review team composed of technical staff members from the NRC and the State of Arkansas. Team members are identified in Appendix A. The review was conducted in accordance with the “Implementation of the Integrated Materials Performance Evaluation Program and Rescission of Final General Statement of Policy,” published in the *Federal Register* on October 16, 1997, and NRC Management Directive 5.6, “Integrated Materials Performance Evaluation Program (IMPEP),” dated February 26, 2004. Preliminary results of the review, which covered the period of April 4, 2009–May 2, 2014, were discussed with the NRC Region IV managers on the last day of the review.

[A paragraph on the results of the Management Review Board (MRB) meeting will be included in the final report.]

The Region IV radioactive materials program is administered by the Director of the Division of Nuclear Materials Safety (the Division) who reports directly to the Regional Administrator. Organization charts for Region IV and the Division are included as Appendix B. At the time of the review, the Division regulated 564 specific licenses authorizing possession and use of radioactive materials, and 15 uranium recovery licensees.

In preparation for the review, a questionnaire addressing the common and applicable non-common performance indicators was sent to the Region on December 18, 2013. The Region provided its response to the questionnaire on April 9, 2014. A copy of the questionnaire response can be found in NRC’s Agencywide Documents Access and Management System (ADAMS) using the Accession Number ML14107A418.

The review team’s general approach for conduct of this review consisted of (1) examination of the Division’s response to the questionnaire, (2) analysis of quantitative information from the licensing, inspection, and allegation databases, as well as ADAMS, (3) technical review of selected regulatory actions, (4) field accompaniments of four inspectors, and (5) interviews with staff and managers. The review team evaluated the information gathered against the established criteria for each common and the applicable non-common performance indicator and made a preliminary assessment of the Region IV’s performance.

Section 2.0 of this report covers actions in response to recommendations made during the previous review(s). Results of the current review of the common performance indicators are presented in Section 3.0. Section 4.0 details the results of the review of the applicable non-common performance indicators, and Section 5.0 summarizes the review team’s findings.

## 2.0 STATUS OF ITEMS IDENTIFIED IN PREVIOUS REVIEWS

There were no performance recommendations for Region IV’s action made during the previous review. The 2009 review team did recommend that the Office of Federal and State Materials and Environmental Management Programs (FSME) develop and provide clarification to the NRC Regions on the requirements for marking of inspection and licensing correspondence. The Office of Federal and State Materials and Environmental Management Programs issued RCPD letter RCPD-11-005 (ML 110330345) “Additional Guidance and Clarification Regarding

the Review of the Control of Sensitive Information During Integrated Materials Performance Evaluation Program Reviews.” This recommendation is closed.

### 3.0 COMMON PERFORMANCE INDICATORS

Five common performance indicators are used to review NRC regional and Agreement State radioactive materials programs. These indicators are (1) Technical Staffing and Training, (2) Status of Materials Inspection Program, (3) Technical Quality of Inspections, (4) Technical Quality of Licensing Actions, and (5) Technical Quality of Incident and Allegation Activities.

#### 3.1 Technical Staffing and Training

Considerations central to the evaluation of this indicator include the Division’s staffing level and staff turnover, as well as the technical qualifications and training histories of the staff. To evaluate these issues, the review team examined the Division’s questionnaire response relative to this indicator, interviewed managers and staff, reviewed job descriptions and training records, and considered workload backlogs.

The Division is managed by the Director who is supported by a deputy. The Division is composed of three branches: the Nuclear Materials Safety Branch (NMSB) A, NMSB B, and the Repository and Spent Fuel Safety Branch (RSFS). Each is headed by a Branch Chief. The NMSB A performs routine and reactive inspections of materials licensees, and processes enforcement casework associated with these inspections. The NMSB A is responsible to track Region IV materials event reports. The NMSB B performs materials licensing; evaluates financial assurance submittals; processes reciprocity requests from Agreement State licensees; and maintains the materials docket file room. The RSFS conducts inspections of independent spent fuel storage installations and of sites and facilities under decommissioning. The RSFS also conducts routine and reactive uranium recovery inspections. There has been no change in the Division’s structure since 2011. In 2011, the uranium recovery activities were moved from NMSB B to RSFR.

At the time of the review, there were 14 technical staff members involved in the radioactive materials program, totaling approximately 14 full-time equivalents (FTE). There were no positions vacant at the time of this review and the Division is fully staffed. During the 5 year review period, there was some turnover: three retirements, three transfers, and one departure. There were six technical staff hired into the Division over the review period backfilling the vacated positions. The review team determined that staffing levels are adequate for the Region IV’s materials program.

The Division has implemented Inspection Manual Chapter (IMC) 1248, “Formal Qualification Program for Federal and State Material and Environmental Management Program.” Staff members are assigned increasingly complex duties as they progress through the qualification process. To promote knowledge management and succession, the Division takes advantage of mentoring opportunities for less experienced staff. The Division cross-trains licensing staff for materials inspections on a voluntary basis. This affords Division managers the flexibility to allocate resources where needed to adjust workloads between licensing and inspection. Division managers were fully cognizant of the qualification status and training plans for their staff. At the time of the review all materials license reviewers were fully qualified and all but two inspectors were fully qualified. The review team concluded that the Division’s training program

is adequate to carry out its regulatory duties and noted that management supports the Division training program. The staffing and training status for the uranium recovery inspectors is discussed in Section 4.1.1.

Based on the IMPEP evaluation criteria, the review team recommends that Region IV's performance with respect to the indicator, Technical Staffing and Training, be found satisfactory.

### 3.2 Status of Materials Inspection Program

The review team focused on five factors while reviewing this indicator: inspection frequency, overdue inspections, initial inspections of new licenses, timely dispatch of inspection findings to licensees, and performance of reciprocity inspections. The review team's evaluation was based on the Division's questionnaire response relative to this indicator, data gathered from the Division's database, examination of completed inspection casework, and interviews with management and staff.

The review team verified that the Division adheres to the inspection priorities prescribed in IMC 2800, "Materials Inspection Program." The Division conducted 416 Priority 1, 2, and 3 inspections during the review period, based on the inspection frequencies established in IMC 2800. Three of these inspections were conducted overdue by more than 25 percent of the inspection frequency prescribed in IMC 2800. In addition, the Division performed 139 initial inspections during the review period, none of which were conducted overdue. Overall, the review team calculated that the Division performed less than one percent of high priority and initial inspections overdue during the review period.

The review team evaluated the Division's timeliness in providing inspection findings to licensees. A sampling of 22 inspection reports and review of computer printouts used to track this metric indicated that none of the inspection findings were communicated to the licensees beyond 30 days after the inspection.

During the review period, the Division granted reciprocity permits, 235 of which were candidate licensees based upon the criteria in IMC 1220. The review team determined that the Division did not meet the NRC's criteria of inspecting 20 percent of candidate licensees operating under reciprocity in each of the five years covered by the review period (2009–18 percent, 2010 - 11 percent, 2011–6 percent, 2012–13 percent, 2013–5 percent). The Division recognized it did not meet the reciprocity goal for the review period and conducted a self-assessment in this area. The Division determined the goal was not achieved, in part, due to the 2010 Deepwater Horizon Gulf of Mexico oil spill that prohibited helicopter transportation in the Gulf of Mexico and impacted the Division in performing offshore reciprocity inspections. In addition, the Division is challenged by Region IV's geography and substantial travel time needed to reach an inspection location coupled with the short notice typically associated with reciprocity activities. As a result of the shortfall, the Division committed to implement a process to provide greater Branch Chief oversight and better coordination of reciprocity inspections with routine inspections.

Based on the IMPEP evaluation criteria, the review team recommends that Region IV's performance with respect to the indicator, Status of Materials Inspection Program, be found satisfactory.



### 3.3 Technical Quality of Inspections

The review team evaluated the inspection reports, enforcement documentation, inspection field notes, and interviewed inspectors for 22 radioactive materials inspections conducted during the review period. The casework reviewed included inspections conducted by 11 Division inspectors and covered inspections of various license types: broad scope, medical diagnostic and therapy (including gamma knife and high dose-rate remote afterloader), portable gauges, industrial radiography, nuclear pharmacy, well logging, and Increased Security Controls for Large Quantities of Radioactive Materials (Increased Controls). Appendix C lists the inspection casework files reviewed, with case-specific comments, as well as the results of the inspector accompaniments.

Based on the evaluation of casework, the review team noted that inspections covered all aspects of the licensee's radiation safety programs. The review team found that inspection reports were thorough, complete, consistent, and of high quality, with sufficient documentation to ensure that a licensee's performance with respect to health and safety was acceptable. The documentation supported violations, recommendations made to licensees, unresolved safety issues, the effectiveness of corrective actions taken to resolve previous violations and discussions held with licensees during exit interviews.

The inspection procedures utilized by the Division are consistent with the inspection guidance outlined in IMC 2800. An inspection report is completed by the inspector which is then reviewed and signed by the Branch Chief or senior inspector. Supervisory accompaniments were conducted annually for all inspectors.

The review team determined that the inspection findings were appropriate, and prompt regulatory actions were taken, as necessary. Inspection findings were clearly stated and documented in the reports and sent to the licensees with the appropriate letter detailing the results of the inspection. The Division issues to the licensee, either a letter indicating a clear inspection or a Notice of Violation (NOV), in letter format, which details the results of the inspection. When the Division issues an NOV, the licensee is required to provide a written corrective action plan, based on the violations cited, within 30 days. All findings are reviewed by the Branch Chief or designee.

The review team noted that the Division has an adequate supply of survey instruments to support its inspection program. Appropriate, calibrated survey instrumentation, such as Geiger-Mueller (GM) meters, scintillation detectors, ion chambers, micro-R meters, and neutron detectors, was observed to be available. The Division also has a portable multi-channel analyzer. Instruments are calibrated at least annually, or as needed, by an approved vendor with National Institute of Standards and Technology traceable sources. The Division uses a database to track each instrument, its current location, and next calibration date.

Accompaniments of four Division inspectors were conducted by an IMPEP team member during the weeks of February 24 and April 14, 2014. The inspectors were accompanied during health and safety inspections of manufacturing and distribution, industrial radiography, and medical therapy including radiopharmaceutical and high dose rate remote afterloader therapies. The accompaniments are identified in Appendix C. During the accompaniments, the inspectors demonstrated appropriate inspection techniques, knowledge of the regulations, and conducted performance-based inspections. The inspectors were trained, well-prepared for the inspection,

and thorough in their audits of the licensees' radiation safety programs. The inspectors conducted interviews with appropriate personnel, observed licensed operations, conducted confirmatory measurements, and utilized good health physics practices. The inspections were adequate to assess radiological health and safety and security at the licensed facilities.

Based on the IMPEP evaluation criteria, the review team recommends that Regions IV's performance with respect to the indicator, Technical Quality of Inspections, be found satisfactory.

### 3.4 Technical Quality of Licensing Actions

The review team examined completed licensing casework and interviewed license reviewers on 20 specific licensing actions. Licensing actions were reviewed for completeness, consistency, proper radioisotopes and quantities, qualifications of authorized users, adequacy of facilities and equipment, adherence to good health physics practices, financial assurance, operating and emergency procedures, appropriateness of license conditions, and overall technical quality. The casework was also reviewed for use of appropriate deficiency letters and cover letters, reference to appropriate regulations, supporting documentation, consideration of enforcement history, pre-licensing visits, peer/supervisory review, proper signatures, and marking/control of documents that contain sensitive information.

The licensing casework was selected to provide a representative sample of licensing actions completed during the review period. Licensing actions selected for evaluation included 2 new licenses, 4 renewals, 2 decommissioning/termination actions, 11 amendments, and 1 financial assurance review. Casework reviewed included a cross-section of license types, including: broad scope, medical diagnostic and therapy (including gamma stereotactic radiosurgery, high dose-rate remote afterloader, and emerging technologies), service activities, manufacturing and distribution, veterinary, industrial radiography, research and development, nuclear pharmacy, portable gauge, fixed gauge, and pool irradiators. The casework sample represented work from five current license reviewers. A listing of the licensing casework evaluated, with case-specific comments, is provided in Appendix D.

The review team confirmed that all license reviewers had signature authority for licensing actions reviewed, or were reviewed by a second reviewer while under training.

Based on the licensing casework files examined, the review team found that license tie-down conditions were stated clearly and were supported by information contained in the file. Deficiency letters clearly stated regulatory positions and often identified substantive deficiencies in the licensees' documents. The review team also identified that license reviewers are equipped with the NRC's licensing guides, policies, checklists, and standard license conditions specific to the type of licensing actions to ensure consistency in licenses.

Licensing actions were found to be thorough, complete, consistent, and of high quality with health, safety, and security issues properly addressed; however, the review team found that in some of the casework reviewed for major complex licensing actions, the license reviewers did not address all of the health and safety items as described in the NUREG-1556 "Consolidated Guidance About Materials Licenses" series. For example, broad scope applications sometimes did not include acceptance criteria used by the Radiation Safety Committee (RSC) for approval of new uses, users, or facilities or describe approval criteria for non-research activities (e.g.,

manufacturing and distribution); and gamma stereotactic radiosurgery licensees were not always required to submit detailed spot-check procedures that would assist inspectors during the conduct of inspections. In another example, confirmatory shielding calculations were not performed to verify exposure limits. A listing of file specific comments was provided to the Division for its reference.

For one complex license renewal of a broad scope, the license was issued authorizing service of any sealed source and device (except Part 36 irradiators), leak testing, emergency response, distribution and redistribution, instrument calibration, packaging for disposal, research and development with only the program codes for service provides and waste disposal. The IMPEP team noted that the reviewer utilized NUREG-1556, Vol. 18 for the review. While this appears appropriate for the service activities licensed, the other licensed activities should also have been reviewed under the applicable NUREG-1556 Series (e.g., Vol. 5 for irradiators, Vol. 7 for research and development, Vol. 11 for broad scope activities, Vols. 12 and 16 for distribution, and Vol. 17 for SNM). During the review of the renewal, the Division noted that there was not a broad scope program code available that reflects all of the licensee's operations. The IMPEP team determined the license did not properly authorize broad scope activities, service activities, research and development, and the manufacture/distribution of sealed sources or devices to both specific and general licensees with appropriate fee codes assigned. The Division committed to taking measures to address the issues identified by the team for this particular license.

The review team found that financial assurance requirements, pre-licensing guidance implementation, marking of documents, and licensing practices regarding the Increased Controls and Fingerprinting requirements were addressed; however, one license was issued prior to the pre-licensing visit being documented and the full documentation of security requirements (Part 37) could not be located. However, interviews of the license reviewer confirmed that during the day of source installation, the license reviewer and branch chief were on-site and confirmed the required information.

Based on the IMPEP evaluation criteria, the review team recommends that Region IV's performance with respect to the indicator, Technical Quality of Licensing Actions, be found satisfactory.

### 3.5 Technical Quality of Incident and Allegation Activities

In evaluating the effectiveness of the Division's actions in responding to incidents and allegations, the review team examined the Division's response to the questionnaire relative to this indicator, evaluated selected incidents reported for Region IV in the Nuclear Material Events Database (NMED) against those contained in the Division's files, and evaluated the casework for 12 radioactive materials incidents. A list of the incident casework examined may be found in Appendix E. The review team also evaluated the Division's response to 11 allegations involving radioactive materials.

The incidents selected for review included the following categories: equipment failure, potential and actual overexposure, medical event, lost/stolen/abandoned radioactive materials, damaged equipment, and leaking source. The review team determined that the Division's response to incidents was complete and comprehensive. Initial responses were prompt and well-coordinated, and the level of effort was commensurate with the health and safety

significance of the reported incident. The Division dispatched inspectors for on-site investigations in five of the cases reviewed and took suitable enforcement and follow-up actions. The Division provided information to NMED to close reported events in a prompt manner.

The review team examined the Program's implementation of its incident and allegation processes, including written procedures for handling allegations and incident response, file documentation, and the use of NMED. When notification of an incident or an allegation is received, the Division determines the appropriate level of initial response.

In evaluating the effectiveness of the Division's response to allegations, the review team evaluated the completed casework for 11 allegations. The review team concluded that the Program took prompt and appropriate actions in response to concerns raised. The review team noted that the Division documented the investigations of concerns and retained all necessary documentation to appropriately close the allegations. The Division notified the concerned individual(s) of the conclusion of its investigation(s). The review team determined that the Division adequately protected the identity of concerned individuals.

Based on the IMPEP evaluation criteria, the review team recommends that Region IV's performance with respect to the indicator, Technical Quality of Incident and Allegation Activities, be found satisfactory.

#### 4.0 NON-COMMON PERFORMANCE INDICATORS

IMPEP identifies one non-common performance indicator to be used in reviewing Regional radioactive materials programs, the Uranium Recovery Program.

##### 4.1 Uranium Recovery Program

This non-common indicator includes five subelements of the uranium recovery regulatory program: (1) Technical Staffing and Training, (2) Status of the Uranium Recovery Inspection Program, (3) Technical Quality of the Uranium Recovery Inspection Program, (4) Technical Quality of Licensing, and (5) Technical Quality of Incidents and Allegation Activities. Region IV does not conduct uranium recovery licensing, this is performed by staff in the Division of Waste Management and Environmental Protection, FSME; therefore, subelement 4 was not addressed in this review.

At the time of this IMPEP review, the Region IV uranium recovery program consists of five operating in situ leach facilities (Power Resources Smith Ranch, Crow Butte, Uranium One, Lost Creek, and Uranerz); four additional in situ licensed sites that are not currently operational; one conventional mill in standby status; and ten conventional mill sites in various phases of decommissioning.

##### 4.1.1 Technical Staffing and Training

In reviewing this subelement, the review team considered staffing level, technical qualifications of the staff, staff training, and staff turnover. The duties and responsibilities for the Region IV uranium recovery program are assigned to the staff within the RSFS Branch in the Division. Presently there are two inspectors who perform the uranium recovery inspections. The review team determined that the Division's staffing level for uranium recovery inspections needs to be

enhanced based on workload at the time of the review and the new licenses recently issued by FSME. The review team discussed the need for additional staff trained to conduct uranium recovery inspections with Region IV management after reviewing the increase in the uranium recovery budgeted resources for fiscal year 2015 and beyond. The review team determined that the current staff qualifications and training were adequate. The Region IV uranium recovery inspectors have reactor health physics or radioactive materials safety backgrounds. Region IV inspectors routinely coordinated inspections with technical staff from FSME for the necessary expertise to review other areas such as geotechnical engineering, hydrology, and geosciences. The team found that during the review period there was little ongoing activity that warranted joint inspections between Region IV and FSME staff; however, Region IV staff maintained communication with FSME technical and licensing uranium recovery staff for effective inspections at the decommissioning sites.

#### 4.1.2 Status of Uranium Recovery Inspection Program

The review team focused on several factors in evaluating the Division's performance for this subelement, including inspection frequency, overdue inspections, timely issuance of inspection findings to licensees, and inspection follow-up. The review team's evaluation is based on a review of the Division's response to the questionnaire relative to this indicator, the uranium recovery inspection schedule, selected inspection casework files, and interviews with inspection staff and managers.

During the review period, the Division conducted 46 inspections, 3 pre-operational inspections, and 14 site visits of Department of Energy generally licensed sites. Most of the sites are non-operating conventional mills that are in various stages of decommissioning and reclamation. The inspection frequency for each site is established through a Master Inspection Plan developed by the Division in conjunction with the FSME. The inspection schedule is based on guidance in NRC IMC 2641, "In-Situ Leach Facilities Inspection Program," and IMC 2801, "Uranium Mill and 11e.(2) Byproduct Material Disposal Site and Facility Inspection Program." The review team concluded that there were no overdue inspections in the Uranium Recovery Program. The review team evaluated the timeliness of the issuance of inspection findings during the inspection file review. The review team determined that four inspection reports were issued greater than 30 days after completion of the inspection and final closeout with licensee managers and operations staff. In addition, there were three inspection reports that have not been issued that were greater than 30 day from the inspection exit. The review team determined that the increase in inspection workload for the Region IV uranium recovery program recently has caused delays in the completion of the inspection reports.

#### 4.2.3 Technical Quality of Inspections

In reviewing this subelement, the review team examined inspection reports and other documentation for 14 inspections conducted by the Division during the review period. The cases selected for review covered various licensees representing a range of uranium recovery inspection activities for different stages of facility operation. The review team interviewed inspectors and managers to assess the adequacy of their preparation for the inspections, the depth and content of the actual inspections, and the appropriateness of inspection findings. The uranium recovery files evaluated by the review team are listed in Appendix C.

Generally, one Region IV uranium recovery inspector will conduct an inspection with occasional

assistance from other inspectors, supervisors, or FSME technical staff. The inspectors coordinate, plan, and prepare for inspections by reviewing relevant manual chapters, inspection procedures, previous inspection reports, licenses, incident reports, notices of violations, and other background information. Division inspectors will often consult with the uranium recovery licensing staff in FSME before inspections.

The review determined that, during a typical inspection, inspectors observe licensee operations; interview workers, managers, and contractors; review facility records; examine site operating plans and procedures; and make independent measurements during inspections. Although the Division's uranium recovery inspectors primarily focus on health physics and radiation safety issues, they also routinely inspect for environmental monitoring, management, and organizational issues. The inspectors typically observe a broad spectrum of licensee operations and include input from other technical staff assisting in the inspection, as appropriate. The team concluded that the inspections were adequate to assess radiological health and safety, and adherence to the NRC requirements at licensed facilities.

The review team found that the Division's uranium recovery inspection reports were well written, provided appropriate depth, and were promptly reviewed by supervisors. They addressed compliance conditions for the licensees, and demonstrated that the inspectors pursued root causes where problems or violations were identified. The inspection findings lead to appropriate and prompt regulatory action. Licensees are given 30 days to reply to the Notice of Violation. After the response, an acknowledgement letter is sent to the licensee indicating if the review of the proposed corrective actions is satisfactory or not.

The review team determined that during the review period, the uranium recovery inspectors had been accompanied by their supervisors at least once a year. The review team found that the supervisors routinely meet with the uranium recovery inspectors after their inspections to review inspection findings and to plan follow-up strategy.

#### 4.1.4 Technical Quality of Licensing Actions

Since the Division does not perform uranium recovery licensing actions, this subelement was not evaluated during the review.

#### 4.1.5 Technical Quality of Incident and Allegation Activities

For this subelement, the review team examined the files and other information on the uranium recovery incidents provided by the Division in its response to the questionnaire, response timeliness and inspection reports, and interviewed the inspection staff involved with incident and allegation activities.

The Division received no notifications of uranium recovery incidents during the review period. However, there were two incidents that were identified during inspections concerning not properly restricting access to and proper posting of areas that exceeded 2 mrem in any one hour. The incidents were captured in NMED. The licensees took prompt corrective action in both cases. Division staff followed up to ensure actions were properly completed. Region IV had four allegations during the review period. One allegation was closed out with an appropriate evaluation and response to the concerned individual in accordance with NRC allegation procedures. The other three allegations are being addressed by the Office of

Investigations and remained open at the time of the review.

Based on the IMPEP evaluation criteria, the review team recommends that Regions IV's performance with respect to the indicator, Uranium Recovery Program, be found satisfactory.

## 5.0 SUMMARY

As noted in Sections 3.0 and 4.0 above, the NRC RIV materials program was found satisfactory for all six performance indicators reviewed. The review team did not make any recommendations regarding program performance by the region and determined that the recommendation from the 2009 IMPEP review made to FSME should be closed.

Accordingly, the review team recommends that the NRC Region IV program be found adequate to protect public health and safety. Based on the results of the current IMPEP review, the review team recommends that the next full IMPEP review take place in approximately five years.

## LIST OF APPENDICES

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Appendix B	Region IV Organization Charts
Appendix C	Inspection Casework Reviews
Appendix D	License Casework Reviews
Appendix E	Incident Casework Reviews



APPENDIX A

IMPEP REVIEW TEAM MEMBERS

<b>Name</b>	<b>Area of Responsibility</b>
Lisa Dimmick, FSME	Technical Staffing and Training Status of Materials Inspection Program Team Leader
Penny Lanzisera, Region I	Technical Quality of Licensing Actions
Geoffrey Warren, Region III	Technical Quality of Incident and Allegation Activities Inspector Accompaniments
Steve Mack, AR	Technical Quality of Inspections
Dennis Sollenberger, FSME	Uranium Recovery Program

APPENDIX B

NRC REGION IV ORGANIZATION CHARTS

ADAMS ACCESSION NO.: ML14157A220

## APPENDIX C

### INSPECTION CASEWORK REVIEWS

NOTE: CASEWORK LISTED WITHOUT COMMENT IS INCLUDED FOR COMPLETENESS.

File No.: 1		
Licensee: Short / Dolan Investments, Inc. d/b/a Pacific Island Inspection		License No.: 02-29359-01
Inspection Type: Initial, Announced		Priority: 1
Inspection Date: 4/28/10		Inspector: RM
File No.: 2		
Licensee: Short / Dolan Investments, Inc. d/b/a Pacific Island Inspection		License No.: 02-29359-01
Inspection Type: Reciprocity / Unannounced		Priority: 1
Inspection Date: 7/29-8/18/09		Inspector: LD
File No.: 3		
Licensee: ARS International, Inc.		License No.: 17-29441-01
Inspection Type: Initial, Announced		Priority: 2
Inspection Date: 4/22/13		Inspector: LH
File No.: 4		
Licensee: Panhandle Geotechnical & Environmental, Inc.		License No.: 26-29304-01
Inspection Type: Initial, Announced		Priority: 5
Inspection Date: 2/9-4/16/09		Inspector: JR
File No.: 5		
Licensee: Panhandle Geotechnical & Environmental, Inc.		License No.: 26-29304-01
Inspection Type: Follow-up, Unannounced		Priority: 5
Inspection Date: 4/20/10		Inspectors: LH/VC
File No.: 6		
Licensee: Anchorage Radiation Oncology Management, Inc. d/b/a Anchorage Radiation Therapy Center		License No.: 50-35068-01
Inspection Type: Initial, Announced		Priority: 2
Inspection Date: 12/16-18/13		Inspectors: MS/JW
File No.: 7		
Licensee: St. Luke Community Hospital		License No.: 25-29421-01
Inspection Type: Initial, Announced		Priority: 3
Inspection Date: 11/15/11		Inspector: JT
File No.: 8		
Licensee: Uranium One Americas, Inc.		License No.: 49-29384-01
Inspection Type: Initial, Announced		Priority: 3
Inspection Date: 11/17/10 & 11/07/13		Inspector: LH

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File No.: 9

Licensee: Pacific Radiopharmacy, Ltd.  
Inspection Type: Routine, Unannounced  
Inspection Date: 10/29-11/07/13

License No.: 53-16991-01  
Priority: 2  
Inspector: RM

File No.: 10

Licensee: Century Geophysical Corporation  
Inspection Type: Routine, Unannounced  
Inspection Date: 9/10/13

License No.: 35-04017-04  
Priority: 3  
Inspector: LR

File No.: 11

Licensee: C & J's NDT, Inc.  
Inspection Type: Routine, Announced  
Inspection Date: 2/27-3/29/12

License No.: 33-29238-01  
Priority: 1  
Inspector: MH

File No.: 12

Licensee: Metals Testing Services, Inc.  
Inspection Type: Routine, Unannounced  
Inspection Date: 10/28/13

License No.: 25-29406-01  
Priority: 1  
Inspector: MS

File No.: 13

Licensee: Advanced Isotopes of Idaho  
Inspection Type: Routine, Unannounced  
Inspection Date: 1/24/11

License No.: 11-29216-01 MD  
Priority: 2  
Inspector: LR

File No.: 14

Licensee: Qal-Tek, LLC  
Inspection Type: Routine, Unannounced  
Inspection Date: 4/13/2011

License No.: 11-27610-01  
Priority: 2  
Inspector: MH

File No.: 15

Licensee: Qal-Tek, LLC  
Inspection Type: Routine, Unannounced  
Inspection Date: 4/11-08/09, 2013

License No.: 11-27610-01  
Priority: 2  
Inspector: JT

File No.: 16

Licensee: Memorial Hospital of Laramie County  
d/b/a Cheyenne Regional Medical Center  
Inspection Type: Routine, Unannounced  
Inspection Date: 3/1/2012

License No.: 49-01380-01  
Priority: 2  
Inspectors: DS/JT

File No.: 17

Licensee: Halliburton Energy Services, Inc.  
Inspection Type: Routine, Unannounced  
Inspection Date: 9/14/2012

License No.: 42-01068-07  
Priority: 3  
Inspector: LH

File No.: 18

Licensee: Halliburton Energy Services, Inc.  
Inspection Type: Routine, Unannounced, Field Location  
Inspection Date: 5/13/2011

License No.: 42-01068-07  
Priority: 2  
Inspector: JR

File No.: 19

Licensee: Southwest X-Ray Corporation  
Inspection Type: Routine, Announced  
Inspection Date: 7/8/2013

License No.: 49-29277-01  
Priority: 1  
Inspector: DS

File No.: 20

Licensee: The Navajo Nation, Department of Water Resources  
Inspection Type: Routine, Announced  
Inspection Date: 3/20/2012

License No.: 02-29109-02  
Priority: 3  
Inspectors: RT/TG

File No.: 21

Licensee: H&H X-Ray Services, Inc.  
Inspection Type: Routine, Unannounced  
Inspection Date: 4/23/2013

License No.: 17-19236-01  
Priority: 1  
Inspector: LH

File No.: 22

Licensee: Southwest X-Ray Corporation  
Inspection Type: Routine, Unannounced  
Inspection Date: 5/16/2012

License No.: 49-29277-01  
Priority: 1  
Inspector: TG

File No.: 23

Licensee: Uranerz Energy Corp  
Inspection Type: Initial/Preoperational Inspection  
Inspection Date: 11/18-21/13 and 01/28-30/14

License No.: SUA-1597  
Priority: 6 months  
Inspectors: LG, RE, RL, ES

Comment: Report was issued 30 days overdue.

File No.: 24

Licensee: Lost Creek ISR, LLC  
Inspection Type: Initial/Preoperational Inspection  
Inspection Date: 6/24-27/13, 7/29-30/13, 8/27/13

License No.: SUA-1598  
Priority: 6 months  
Inspectors: LG, RE, JS, DM, RL, BvT

Comment: Report issued 150 days overdue.

File No.: 25

Licensee: Pathfinder Mines Corp.  
Inspection Type: Routine  
Inspection Date: 9/25/13

License No.: SUA-442  
Priority: 2  
Inspectors: LG, TC

Comment: Report issued 32 days overdue.

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File No.: 26

Licensee: Exxon Mobil Environmental Services, Co.

Inspection Type: Routine

Inspection Date: 9/24/13

License No.: SUA-1139

Priority: 2

Inspectors: LG, TC

Comment: Report issued 35 days overdue.

File No.: 27

Licensee: Power Resources, Inc.

Inspection Type: Routine

Inspection Date: 9/9-12/13

License No.: SUA-1548

Priority: 6 months

Inspectors: LG, DM, ES, BvT, AW

Comment: Report issued 72 days overdue.

File No.: 28

Licensee: Kennecott Uranium Company.

Inspection Type: Routine

Inspection Date: 8/28/13

License No.: SUA-1350

Priority: 2

Inspector: LG

File No.: 29

Licensee: United Nuclear Corp.

Inspection Type: Routine

Inspection Date: 7/18/13

License No.: SUA-1475

Priority: 2

Inspector: RE

File No.: 30

Licensee: Rio Algom Mining, LLC.

Inspection Type: Routine

Inspection Date: 7/16-17/13

License No.: SUA-1473

Priority: 2

Inspector: RE

File No.: 31

Licensee: Crowe Butte Resources, Inc.

Inspection Type: Routine, Unannounced

Inspection Date: 6/4-6/13

License No.: SUA-1534

Priority: 1

Inspectors: LG, TL, RB

File No.: 32

Licensee: Uranium One

Inspection Type: Routine

Inspection Date: 1/29-31/13

License No.: SUA-1341

Priority: 6 months

Inspectors: LG, RL, AV

File No.: 33

Licensee: Power Resources, Inc.

Inspection Type: Routine

Inspection Date: 4/1-4/13, 5/29-30/13

License No.: SUA-1548

Priority: 6 months

Inspectors: LG, ES, VK

File No.: 34

Licensee: Uranium One USA, Inc.

Inspection Type: Special (Follow up to CAL)

Inspection Date: 9/11-13/12, 10/23/12

License No.: SUA-1341

Priority: NA

Inspectors: RE, LG, DBS, +2 DOT

File No.: 35

Licensee: Uranium One USA, Inc.

Inspection Type: Routine

Inspection Date: 4/16-18/12

License No.: SUA-1341

Priority: 6 months

Inspectors: LG, RL, HY

File No.: 36

Licensee: Homestake Mining Company.

Inspection Type: Routine

Inspection Date: 8/21-22/12

License No.: SUA-1471

Priority: 2

Inspector: GS

### INSPECTOR ACCOMPANIMENTS

The following inspector accompaniments were performed prior to the on-site IMPEP review:

Accompaniment No.: 1

Licensee: Premier Technology, Inc.

Inspection Type: Routine/Special/Unannounced

Inspection Date: 2/24/14

License No.: 11-27746-01

Priority: 1

Inspector: DS

Accompaniment No.: 2

Licensee: International Isotopes, Inc.

Inspection Type: Routine/Unannounced

Inspection Date: 2/25/14

License No.: 11-27680-01

Priority: 2

Inspectors: DS/MH

Accompaniment No.: 3

Licensee: Sabia, Inc.

Inspection Type: Routine/Unannounced

Inspection Date: 2/26/14

License No.: 11-27727-01

Priority: 5

Inspector: MH

Accompaniment No.: 4

Licensee: St. Alphonsus Regional Medical Center

Inspection Type: Routine/Unannounced

Inspection Date: 2/27/14

License No.: 11-27306-01

Priority: 2

Inspector: LH

Accompaniment No.: 5

Licensee: JanX

Inspection Type: Routine/Special/Unannounced

Inspection Date: 4/14-15/14

License No.: 21-16560-01

Priority: 1

Inspector: JT

## APPENDIX D

### LICENSE CASEWORK REVIEWS

NOTE: CASEWORK LISTED WITHOUT COMMENT IS INCLUDED FOR COMPLETENESS.

File No.: 1

Licensee: Billings Clinic  
Type of Action: Amendment  
Date Issued: 10/31/13

License No.: 25-01051-01  
Amendment No.: 91  
License Reviewer: LR

Comments: Several items discussed in NUREG-1556, Vol. 9 and guidance specific to Perfexion were not addressed in this review.

File No.: 2

Licensee: Billings Clinic  
Type of Action: Amendment  
Date Issued: 2/27/14

License No.: 25-01051-01  
Amendment No.: 93  
License Reviewer: JC

File No.: 3

Licensee: Anchorage Radiation Oncology Management, Inc.  
Type of Action: New  
Date Issued: 7/3/13

License No.: 50-35068-01  
Amendment No.: 0  
License Reviewer: MS

Comments:

- a) Several items discussed in NUREG-1556, Vol. 9 were not addressed in this review.
- b) Pre-licensing checklist was incomplete.

File No.: 4

Licensee: Anchorage Radiation Oncology Management, Inc.  
Type of Action: Amendment – Perfexion GSR – medical use  
Date Issued: 12/15/13

License No.: 50-35068-01  
Amendment No.: 1  
License Reviewer: MS

File No.: 5

Licensee: Qal-Tek Associates, LLC.  
Type of Action: Renewal – Type A Broadscope Service License & M&D  
Date Issued: 5/21/09

License No.: 11-27610-01  
Amendment No.: 17  
License Reviewer: RT

Comments: Appropriate NUREG-1556 guidance documents were not used during the review and in the license preparation.

File No.: 6

Licensee: International Isotopes, Inc.  
Type of Action: Financial Assurance - M&D Broad - Type A  
Date Issued: 2/26/10

License No.: 11-27680-01  
Amendment No.: n/a  
License Reviewer: RT



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File No.: 7

Licensee: International Isotopes, Inc.

Type of Action: Renewal – Manufacturing & Distribution Broad - Type A

Date Issued: 9/14/10

License No.: 11-27680-01

Amendment No.: 21

License Reviewer: RT

File No.: 8

Licensee: SABIA, Inc.

Type of Action: Renewal - Service

Date Issued: 10/9/12

License No.: 11-27727-01

Amendment No.: 15

License Reviewer: RT

File No.: 9

Licensee: Pa'ina Hawaii, LLC

Type of Action: Amendment – Pool Irradiator

Date Issued: 10/15/12

License No.: 53-29296-01

Amendment No.: 3

License Reviewer: RT

File No.: 10

Licensee: Horrocks Engineers, Inc.

Type of Action: New – Portable Gauge

Date Issued: 4/4/14

License No.: 43-35140-01

Amendment No.: 0

License Reviewer: MH

File No.: 11

Licensee: VCA University Animal Hospital

Type of Action: Termination - Veterinary

Date Issued: 4/21/14

License No.: 53-27684-01

Amendment No.: 4

License Reviewer: MS

File No.: 12

Licensee: PP & L Montana, LLC

Type of Action: 3120 – Amendment - Fixed Gauge

Date Issued: 4/9/14

License No.: 25-18011-01

Amendment No.: 20

License Reviewer: LR

File No.: 13

Licensee: Techcorr USA, LLC

Type of Action: 3320 – Amendment - Industrial Radiography

Date Issued: 4/9/14

License No.: 42-29261-01

Amendment No.: 10

License Reviewer: JC

File No.: 14

Licensee: Kalispell Regional Medical Center

Type of Action: 2240 – Amendment - Emerging Technology

Date Issued: 4/14/14

License No.: 25-15463-01

Amendment No.: 41

License Reviewer: LR

File No.: 15

Licensee: Dept. of Health & Human Services

Type of Action: 3620- Amendment - Research & Development

Date Issued: 1/15/14

License No.: 17-14996-01

Amendment No.: 24

License Reviewer: JC

File No.: 16

Licensee: St. Peter's Hospital

Type of Action: 2120 – Renewal – Medical Institution WD Required

Date Issued: 2/14/14

License No.: 25-12453-02

Amendment No.: 41

License Reviewer: JC

File No.: 17

Licensee: St. Vincent Healthcare

Type of Action: Amendment – High Dose Rate Remote Afterloader

Date Issued: 3/7/14

License No.: 25-07553-01

Amendment No.: 87

License Reviewer: MH

File No.: 18

Licensee: Pharmalogic MT. Inc.

Type of Action: Amendment – Nuclear Pharmacy

Date Issued: 3/7/14

License No.: 09-29398-01MD

Amendment No.: 4

License Reviewer: MH

File No.: 19

Licensee: Cassia Regional Medical Center

Type of Action: Amendment – Medical Institution, No WD

Date Issued: 3/11/14

License No.: 11-27393-01

Amendment No.: 15

License Reviewer: JC

File No.: 20

Licensee: Nelcon, Inc.

Type of Action: Termination – Portable Gauge

Date Issued: 12/3/13

License No.: 5-29423-01

Amendment No.: 1

License Reviewer: MH

## APPENDIX E

### INCIDENT CASEWORK REVIEWS

NOTE: CASEWORK LISTED WITHOUT COMMENT IS INCLUDED FOR COMPLETENESS.

File No.: 1	
Licensee: Acuren USA	License No.: 50-32443-01
Date of Incident: 10/04/12	NMED No.: 120630
Investigation Date: 10/19/12, 1/18/13	Type of Incident: Equipment Failure
	Type of Investigation: Site
File No.: 2	
Licensee: Fairbanks Gold Mining Inc.	License No.: 50-29098-01
Date of Incident: 10/19/11	NMED No.: 110541
Investigation Date: 2/8/12	Type of Incident: Equipment Failure
	Type of Investigation: Phone
File No.: 3	
Licensee: Acuren USA	License No.: 42-32443-01
Date of Incident: 6/22/11	NMED No.: 110455
Investigation Date: 1/10/12	Type of Incident: Overexposure
	Type of Investigation: Phone
File No.: 4	
Licensee: Benefis Hospitals	License No.: 25-12710-01
Date of Incident: 1/05/12	NMED No.: 120054
Investigation Date: 1/17-19/12	Type of Incident: Medical Event
	Type of Investigation: Site
File No.: 5	
Licensee: Western South Dakota Community Action Agency	License No.: General Licensee
Date of Incident: 6/29/11	NMED No.: 110377
Investigation Date: 8/09/11	Type of Incident: Stolen RAM
	Type of Investigation: Phone
File No.: 6	
Licensee: Halliburton Energy Services	License No.: Reciprocity Licensee
Date of Incident: 4/20/10	NMED No.: 100204
Investigation Date: 7/27/10	Type of Incident: Lost RAM
	Type of Investigation: Phone
File No.: 7	
Licensee: FMC Corporation	License No.: 49-04295-01
Date of Incident: 9/03/09	NMED No.: 090883
Investigation Date: 4/27/10 – 4/29/10	Type of Incident: Overexposure
	Type of Investigation: Site

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File No.: 8

Licensee: Century Inspection

Date of Incident: 6/18/09

Investigation Date: 6/23/09 – 6/31/09

License No.: 42-08456-02

NMED No.: 090672

Type of Incident: Potential Overexposure

Type of Investigation: Site

File No.: 9

Licensee: Avera McKennan Hospital

Date of Incident: 1/16/12

Investigation Date: 1/30/12 – 2/02/12

License No.: 40-16571-01

NMED No.: 120067

Type of Incident: Medical Event

Type of Investigation: Site

File No.: 10

Licensee: Mid Pacific Testing & Inspection

Date of Incident: 7/15/10

Investigation Date: 12/17/10

License No.: 53-29044-01

NMED No.: 100359

Type of Incident: Damage to Equipment

Type of Investigation: Phone

File No.: 11

Licensee: Sanford Medical Center

Date of Incident: 6/6/12

Investigation Date: 4/26/13

License No.: 40-12378-01

NMED No.: 130229

Type of Incident: Leaking Source

Type of Investigation: Phone

File No.: 12

Licensee: Schlumberger Technology Group

Date of Incident: 9/25/13

Investigation Date: 9/25/13

License No.: 42-00090-03

NMED No.: 130495

Type of Incident: Abandoned RAM

Type of Investigation: Phone