

August 22, 2013

John Wiesman, DrPH, MPH  
Secretary of Health  
Washington Department of Health  
P.O. Box 47890  
Olympia, WA 98504-7890

Dear Dr. Wiesman:

On July 23, 2013, the Management Review Board (MRB) met to consider the proposed final Integrated Materials Performance Evaluation Program (IMPEP) report on the Washington Agreement State Program for the IMPEP review conducted on May 6-10, 2013. The MRB found the Washington Agreement State Program adequate to protect public health and safety and compatible with the U.S. Nuclear Regulatory Commission's program.

Section 5.0, page 18, of the enclosed final report contains a summary of the IMPEP team's findings and recommendations. The review team made one recommendation regarding the assessment of incidents for generic issues. We request your evaluation and response to the one recommendation in the report within 30 days from receipt of this letter. Based on the results of the current IMPEP review, the next full review of the Washington Agreement State Program will take place in approximately 5 years, with a periodic meeting tentatively scheduled for May 2014. The Washington Agreement State Program received an extension of 1 year for the next IMPEP review based on two consecutive IMPEP reviews with satisfactory findings for all the performance indicators reviewed.

I appreciate the courtesy and cooperation extended to the IMPEP team during the review. I also wish to acknowledge your continued support for the Agreement State program. I look forward to our agencies continuing to work cooperatively in the future.

Sincerely,

***/RA by Catherine Haney for/***

Michael F. Weber  
Deputy Executive Director for Materials, Waste,  
Research, State, Tribal and Compliance Programs  
Office of the Executive Director for Operations

Enclosure:  
Washington Final IMPEP Report

cc w/ encl: Maryanne Guichard  
Assistant Secretary

Jared Thompson, AR  
Organization of Agreement States  
Liaison to the MRB

John Wiesman, DrPH, MPH  
 Secretary of Health  
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August 22, 2013

SUBJECT: WASHINGTON FY2013 FINAL IMPEP REPORT

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INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM  
REVIEW OF THE WASHINGTON AGREEMENT STATE PROGRAM

May 6-10, 2013

**FINAL REPORT**

Enclosure

## EXECUTIVE SUMMARY

This report presents the results of the Integrated Materials Performance Evaluation Program (IMPEP) review of the Washington Agreement State Program. The review was conducted during the period of May 6-10, 2013, by a review team composed of technical staff members from the U.S. Nuclear Regulatory Commission (NRC) and the State of Texas.

Based on the results of this review, the review team recommended and the Management Review Board (MRB) agreed that Washington's performance be found satisfactory for all performance indicators reviewed. The review team made one recommendation regarding program performance by the State. The review team recommends that the State implement a process to ensure that radioactive material incidents involving sealed sources and devices registered by the State are periodically and independently assessed for generic issues and that any potential generic issues are communicated to licensees and fellow regulators in a timely manner.

Accordingly, the review team recommended, and the MRB agreed, that the Washington Agreement State Program be found adequate to protect public health and safety and compatible with the NRC's program. The review team recommended, and the MRB agreed, that the next periodic meeting be held in one year in order to monitor the Office of Radiation Protection's transition to a new director. The review team recommended the next IMPEP review be held in four years and not extended to five years in order to monitor the management changes. The MRB, however, directed that the next IMPEP review be held in five years and the need for a second periodic meeting would be determined after the periodic meeting in May 2014.

## 1.0 INTRODUCTION

This report presents the results of the review of the Washington Agreement State Program. The review was conducted during the period of May 6-10, 2013, by a review team composed of technical staff members from the U.S. Nuclear Regulatory Commission (NRC) and the State of Texas. 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 May 10, 2008, to May 10, 2013, were discussed with Washington managers on the last day of the review.

A draft of this report was provided to Washington for factual comment on June 10, 2013. The State responded by letter dated July 10, 2013. A copy of the State's response is included as an Attachment to this report. A Management Review Board (MRB) met on July 23, 2013, to consider the proposed final report. The MRB found the Washington Agreement State Program adequate to protect public health and safety and compatible with the NRC's program.

The Washington Agreement State program is administered by the Office of Radiation Protection (the Office) in the Division of Environmental Public Health (the Division). The Division is part of the Department of Health (the Department). Organization charts for the Department, the Division, and the Office are included in Appendix B.

At the time of the review, the Washington Agreement State Program regulated 390 specific licenses authorizing possession and use of radioactive materials. The review focused on the radioactive materials program as it is carried out under the Section 274b. (of the Atomic Energy Act of 1954, as amended) Agreement between the NRC and the State of Washington.

In preparation for the review, a questionnaire addressing the common and applicable non-common performance indicators was sent to the Office on January 24, 2013. The Office provided its response to the questionnaire on April 18, 2013. A copy of the questionnaire response can be found in NRC's Agencywide Documents Access and Management System (ADAMS) using the Accession Number ML13112A246.

The review team's general approach for conduct of this review consisted of (1) examination of the Office's response to the questionnaire, (2) review of applicable Washington statutes and regulations, (3) analysis of quantitative information from the Office's database, (4) technical review of selected regulatory actions, (5) field accompaniments of seven inspectors, and (6) 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 Washington Agreement State Program's performance.

Section 2.0 of this report covers the State's actions in response to recommendations made during previous reviews. 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

During the 2008 IMPEP review, which concluded on May 9, 2008, the review team made no recommendations regarding the Washington Agreement State Program's performance

## 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

Issues central to the evaluation of this indicator include the Office'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 Office's questionnaire response relative to this indicator, interviewed Office managers and staff, reviewed job descriptions and training records, and considered any possible workload backlogs.

The Office is managed by the Office Director and two Deputy Directors. The Office is composed of six sections, each reporting to one of the two Deputy Directors. One Deputy Director is located in the Olympia Office and is responsible for the operations of the X-Ray Section and the Radiological Emergency Preparedness Section. This Deputy Director also has oversight responsibility for support staff that is shared among the Sections. The other Deputy Director is stationed in the Richland Office and is responsible for the operations of four sections: the Radioactive Air Emissions Section, the Environmental Sciences Section, the Radioactive Materials Section (the Materials Section), and the Waste Management Section (the Waste Section).

During the review period, the Office experienced a high degree of turnover at the supervisory positions. The Office Director at the previous IMPEP review retired in November 2010. The position was filled by one of the previous Deputy Directors through June 2012. That vacancy was filled by an individual outside the Office through December 2012. The resulting vacancy was unfilled until May 16, 2013, when the current Office Director reported for duty. During the vacancy, both Deputy Directors filled in as the Acting Office Director. In addition to the Office Director position, the Office experienced turnover at the Materials Section Supervisor position during the review period. The Materials Section Supervisor at the previous IMPEP review retired in April 2010. That position remained vacant until July 2010, when the now Environmental Sciences Section Supervisor double-filled both positions. The individual left employment with the State in March 2011, and the position was vacant again until April 2011 when the Industrial Program Manager within the Materials Section double-filled both positions. That individual later permanently accepted the Materials Section Supervisor position in June 2011 and vacated the Industrial Program Manager position. The vacated Industrial Program Manager position was then filled by a Health Physicist from within the Materials Section in November 2011. The review team believes that the high degree of turnover at the supervisory positions resulted in a few minor oversights, such as event reporting and generic issue assessment, which are noted later in the report.

The Agreement State program is primarily administered by the Materials Section and the Waste Section, with the other sections providing various degrees of support. Staffing and training for the Materials Section will be covered in this section of the report, and staffing and training for the Waste Section will be covered in Sections 4.3.1 and 4.4.1 of the report.

At the time of the review, there were eight technical staff members with various degrees of involvement in the radioactive materials program. At the time of the review, one technical position was vacant. This position was vacated just prior to the onsite portion of the IMPEP review. The review team determined that Materials Section's technical staffing levels were adequate for the Materials Section's current workload.

The Materials Section has a documented training plan for technical staff that is consistent with the requirements in the NRC/Organization of Agreement States Training Working Group Report and NRC's Inspection Manual Chapter (IMC) 1246, "Formal Qualification Programs in the Nuclear Material Safety and Safeguards Program Area." Staff members are assigned increasingly complex duties as they progress through the qualification process. The review team concluded that the Agency's training program is adequate to carry out its regulatory duties and noted that Agency management supports training opportunities.

During the review of inspection and licensing casework, the review team noted that several inspection records and licensing actions were signed by technically unqualified individuals. In all cases, the individual signing the action was going through the qualification process, and a second qualified individual was present during inspections or conducted a quality assurance review on licensing actions. The review team raised a concern to the Materials Section Supervisor regarding the appearance of an unqualified individual independently conducting regulatory actions. The Materials Section Supervisor stated that this was an existing practice used to establish the basis for an individual's qualifications, but agreed that this practice could create the appearance of a technically unqualified individual independently conducting inspections or reviewing licensing actions. The Materials Section Supervisor committed to having the second qualified individual co-sign the inspection record or licensing action to provide proof that all regulatory actions are completed under the supervision of a technically qualified inspector or license reviewer, as appropriate.

Based on the IMPEP evaluation criteria, the review team recommended, and the MRB agreed, that Washington'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 Office's questionnaire response relative to this indicator, data gathered from the Office's database, examination of completed inspection casework, and interviews with management and staff.

The review team verified that Washington's inspection frequencies for all types of radioactive material licenses are at least as frequent or in most cases more frequent as those license types



listed in IMC 2800, “Materials Inspection Program.” With the exception of industrial radiography licensees, which the Materials Section inspects at the same annual frequency as the NRC, the Materials Section inspects all of its licenses one year sooner than prescribed by IMC 2800. For example, the Materials Section inspects portable gauge licensees at a 4-year frequency, whereas, IMC 2800 prescribes a 5-year inspection frequency. This practice helps ensure that few, if any, of the Materials Section’s inspections are performed overdue per IMC 2800.

The Materials Section conducted approximately 435 Priority 1, 2, and 3 inspections during the review period. Only one of these inspections was conducted overdue by more than 25 percent of the inspection frequency prescribed in IMC 2800. The overdue inspection was an oversight resulting from management transitions within the Office. In addition, the Program performed 59 initial inspections during the review period, of which none were conducted overdue. Overall, the review team calculated that the Materials Section performed less than one percent of its high priority inspections overdue during the review period.

The review team evaluated the Materials Section’s timeliness in providing inspection findings to licensees. The review team noted that the vast majority of findings are communicated to the licensee at the time of inspection on an “Inspection Findings and Licensee Acknowledgement” form. The Materials Section dispatches findings from inspections resulting in larger numbers of violations and inspections of broad scope licenses from the office. For those inspection findings issued from the office, the review team randomly sampled 52 inspection reports and determined that six of the inspection findings were communicated to the licensees beyond the Materials Section’s goal of 30 days after the inspection was completed. Each of those involved broad scope license inspections. The Materials Section self-identified the issue prior to the IMPEP review and changed its process for inspecting broad scope licenses to include built-in time to document its inspection findings to ensure a more timely dispatch of the findings to the licensee. This change has shortened the time for communicating inspection findings to broad scope licensees to less than 30 days.

During the review period, the Program also granted 143 reciprocity permits for candidate licensees based upon the criteria in IMC 1220. The review team determined that the Program met the NRC’s criteria of inspecting 20 percent of candidate licensees operating under reciprocity in each of the four years covered by the review period.

Based on the IMPEP evaluation criteria, the review team recommended, and the MRB agreed, that Washington’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 inspection reports, enforcement documentation, inspection field notes, and interviewed the responsible inspectors for 27 radioactive materials inspections conducted during the review period. The casework examined included a cross-section of inspections conducted by eight current inspectors and one former inspector. The casework covered a wide variety of inspection types including initial and followup security inspections, portable gauges, industrial radiography, medical, well-logging, academic, broadscope, veterinarian nuclear medicine, positron emission tomography, service providers, and gamma

stereotactic radiosurgery (gamma knife). Appendix C lists the inspection casework files reviewed, as well as the results of the inspector accompaniments.

Based on the evaluation of casework, the review team determined that inspections covered all aspects of the licensee's radiation safety programs. The review team noted that the inspection reports were thorough, complete, consistent, and of high quality with sufficient documentation to support that licensees' performances with respect to health, safety, and security were acceptable. Inspection report documentation supported violations, recommendations made to licensees, unresolved safety issues, and discussions held with licensees during exit interviews.

The Material Section's inspection procedures were consistent with the inspection guidance found in IMC 2800. At the conclusion of each inspection, the inspectors have the option to send inspection findings from the office or to use a form similar to the NRC's Form 591 that can be left with the licensee at the conclusion of the inspection. The Materials Section uses this form to document both clear inspections and inspections identifying infractions, deficiencies, or recommendations. The inspector can require a written response from the licensee describing corrective actions to address any infractions, deficiencies, or recommendations. Inspectors can also use this form to document investigations, field site surveys, and close-out surveys. Violations are considered the most severe type of finding and can only be dispatched from the office after management review and approval.

The Materials Section performed quality assurance peer reviews on at least 10 percent of all inspection documentation. All inspection documentation is entered into the Office's electronic filing system, which is accessible to all staff members.

The Materials Section performed staff accompaniments annually. The Materials Section Supervisor accompanied each Health Physicist. He accompanied each Program Manager every other year. In the interim years, Program Managers performed peer accompaniments of each other. The Materials Section used this system to afford the Program Managers the benefits of accompaniments by senior staff members and accompaniments by the Materials Section supervisor.

The review team determined that documents involving Increased Controls inspections were protected, segregated from the electronic file storage system, and maintained in a locked file cabinet with controlled access. The Materials Section maintained its Increased Controls files in visually distinct file folders so staff can easily identify security-related information. The review team determined that the documents reviewed were adequately marked as sensitive information to be withheld from public disclosure.

The review team verified that the Office maintains an adequate supply of appropriately calibrated survey instruments to support the inspection program, and to respond to radioactive materials incidents. Instruments used to support the materials inspection program are sent to the University of Washington Calibration Laboratory or the manufacturer for calibration. The Office receives laboratory and sample analysis support from the State Laboratory. The State laboratory is a licensee of the Office and performs sample analysis for multiple programs within the department. The laboratory has a wide variety of analytical equipment capable of detailed radioisotopic analysis. The equipment includes various scintillation and gamma counters, and high purity germanium counters.

An IMPEP team member accompanied five of the Materials Section's inspectors during the week of April 1, 2013. The inspectors were accompanied during inspections of two medical facilities using high dose-rate remote afterloaders, a medical facility with a gamma knife unit for possession only, a radiography licensee, and a portable gauge licensee. 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 evaluations of the licensees' radiation safety programs. The inspectors conducted interviews with appropriate personnel, identified risk-significant activities, observed licensed operations when available, conducted confirmatory measurements, and used good health physics practices. The inspections were adequate to assess radiological health, safety, and security at the licensed facilities.

Based on the IMPEP evaluation criteria, the review team recommended, and the MRB agreed, that Washington'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 for 19 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 timeliness, use of appropriate deficiency letters and cover letters, reference to appropriate regulations, supporting documentation, consideration of enforcement history, pre-licensing visits, peer/supervisory review, and proper signatures.

The licensing casework was selected to provide a representative sample of licensing actions completed during the review period. Licensing actions selected for evaluation included 3 new licenses, 10 renewal applications, 2 terminations, and 4 amendments. Files reviewed included a cross-section of license types, including: industrial radiography, research laboratories (including universities), medical broadscope, gauges, production using an accelerator, manufacturing and distribution, and gamma knife. The casework sample represented work from nine current and former license reviewers. A list of the licensing casework evaluated is provided in Appendix D.

Overall, the review team found that the licensing actions were thorough, complete, consistent, and of high quality with health, safety, and security issues properly addressed. License tie-down conditions were stated clearly and were supported by information contained in the file. Deficiency emails and letters clearly stated regulatory positions and were used at the proper time. Terminated licensing actions were well documented, showing appropriate transfer and survey records. License reviewers use standard checklists and/or NRC NUREG-1556 series guidance documents, policies, and standard license conditions specific to the type of licensing actions to ensure consistency in licenses.

The license reviewers in the Materials Section have signature authority to sign their own licenses. Every licensing action has a secondary quality assurance (QA) review by another

experienced reviewer. Corrections are made, as needed, and the licensing action is issued. The Materials Section Supervisor reviews every tenth licensing action for technical quality and accuracy.

The Materials Section performed pre-licensing checks on all new applicants. The Materials Section has a policy of hand delivering all new licenses. Each applicant is subject to an onsite evaluation of their radiation safety and security programs prior to license receipt. This practice ensures that applicants have adequate radiation safety and security programs in place prior to the licensees' taking possession of radioactive material. This also serves as the pre-licensing visit.

The review team examined the Material Section's licensing practices regarding the Increased Controls and Fingerprinting Orders. The review team noted that the Materials Section uses legally binding license conditions that meet the criteria for implementing the Increased Controls Orders, including fingerprinting, as appropriate. The review team analyzed the Materials Section's methodology for identifying those licenses and found the rationale was thorough and accurate. The review team confirmed that license reviewers evaluated new license applications and license amendments using the same criteria.

The review team examined the Materials Section's implementation of its procedure for the control of sensitive information. This procedure addresses the identification, marking, control, handling, preparation, transportation, transmission, and destruction of documents that contain sensitive information related to the Increased Controls. Files that contained sensitive information were further secured in locked file cabinets.

Based on the IMPEP evaluation criteria, the review team recommended, and the MRB agreed, that Washington'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 Materials Section's actions in responding to incidents and allegations, the review team examined the Office's response to the questionnaire relative to this indicator, evaluated selected incidents reported for Washington in the Nuclear Material Events Database (NMED) against those contained in the Materials Section's files, and evaluated the casework for 28 of 393 reported radioactive materials incidents. The casework reviewed included nine incidents reported by the NRC or other Agreement States to evaluate Washington's responses to reports of events involving sealed sources and devices registered by the State, as further discussed in Section 4.2.3 of this report. A complete listing of the casework examined can be found in Appendix E. The review team also evaluated the Materials Section's response to the nine allegations involving radioactive materials. The NRC referred eight of these allegations to the State during the review period. The review team evaluated the Materials Section's response to all eight NRC-referred allegations.

When notified of an incident or an allegation, the Materials Section Supervisor and staff discuss the initial response and the need for an on-site investigation. The Materials Section maintains a database for tracking the status of all incidents and allegations. If the incident meets the reportability thresholds, as established in the NRC's Office of Federal and State Materials and

Environmental Management Programs (FSME) Procedure SA-300, "Reporting Material Events," the Materials Section notifies the NRC Headquarters Operation Center within the required timeframe (except in the cases described below). If the investigation is complex and extends over a period of time, NMED is appropriately updated, using the established template.

The review team noted that there were five incidents during the review period involving lost tritium exit signs. The Materials Section did not report these events to the NRC Headquarters Operations Center, as dictated by SA-300. The review team discussed the reportability of lost tritium exit signs and the requirements of reporting under SA-300 with the Materials Section. The Materials Section stated that not reporting the lost tritium exit signs was an oversight and indicated that they would institute a policy to report future incidents of lost tritium exit signs to the NRC Headquarters Operations Center and NMED. The review team believes that the oversight resulted from the management turnover that occurred during the review period. A review of other types of incidents revealed that the Materials Section was properly reporting events to the NRC Headquarter Operations Center. The Materials Section indicated that the five incidents would be submitted for inclusion in NMED in the near future.

The incidents selected for review included both medical and industrial events involving lost or stolen radioactive material, overexposures, damaged equipment, contamination events, a release of radioactive material, and equipment failures. The review team determined that the Materials Section responses to incidents were thorough, complete, and comprehensive. Initial responses were prompt and well-coordinated, and the level of effort was commensurate with the health and safety significance. The review team noted that at the conclusion of investigations, inspectors generated narrative reports that thoroughly documented the investigations. Records were stored in the Office's electronic system and were marked appropriately.

In evaluating the effectiveness of the Materials Section's response to allegations, the review team evaluated the casework for nine allegations. The review team concluded that the Materials Section consistently took prompt and appropriate action in response to the concerns raised. The review team noted that the Materials Section thoroughly documented the investigations and retained all necessary documentation to appropriately close the allegations. The Materials Section notified the allegers of the conclusion of its investigation. The review team determined that the Materials Section adequately protected an allegers' identity.

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

#### 4.0 NON-COMMON PERFORMANCE INDICATORS

Four non-common performance indicators are used to review Agreement State programs: (1) Compatibility Requirements, (2) Sealed Source and Device Evaluation Program, (3) Low-Level Radioactive Waste Disposal Program, and (4) Uranium Recovery Program. NRC's Agreement with Washington includes all of the non-common performance indicators.

#### 4.1 Compatibility Requirements

##### 4.1.1 Legislation

Washington became an Agreement State on December 31, 1966. The Department is designated as the States radiation control agency and implements the radiation control program. The effective statutory authority for control of radioactive materials is contained in RCW 70.98, "Nuclear Energy and Radiation," and RCW 70.121, "Mill Tailings, Licensing and Perpetual Care." The program also is affected by RCW 70.94, "Washington Clean Air Act."

During the review period, the Washington legislature passed two bills affecting the radiation control program. One bill, passed in 2011, gave the Department authority to increase its radioactive waste site surveillance fee to the actual costs of conducting business. The Department adopted the fee increase on August 1, 2012. The other bill, passed in 2012, transferred authority for the low-level radioactive waste site use permit program from the Department of Ecology to the Department. With this transfer, the Department will become the sole agency responsible for the review of permit applications and issuance of site use permits. The Department anticipated adopting this new authority in July 2013.

##### 4.1.2 Program Elements Required for Compatibility

Washington's regulations for control of radiation are found in the Washington Administrative Code and apply to all radioactive materials and devices designed to produce radiation. Washington's radiation regulations are not subject to any "sunset" laws.

The review team examined the State's administrative rulemaking process and found that the process takes approximately 9 to 12 months from the developmental stage to the final adoption by the Secretary of Health and filing with the Code Reviser's Office, after which the rules become effective in 31 days. Washington can adopt the NRC amendments in a shortened time frame as "Exception" rules. An Exception rule is allowed when the program adopts a Federal rule without material change. This shortened process relies on the Federal rulemaking work which provides equivalent documentation to the State's required initial Reasoning for the Rulemaking, Economic Impact Analysis, Small Business Economic Impact Statements, and Legislatively Significant Analysis (cost benefit analysis).

The public, the NRC, other agencies, and all potentially affected licensees and registrants are offered an opportunity to comment during the rulemaking process. Comments are considered and incorporated, as appropriate, before the regulations are finalized, approved, and filed. The Office also has the authority to issue legally binding requirements (e.g., license conditions) in lieu of regulations until compatible regulations become effective.

The review team evaluated Washington's response to the questionnaire relative to this indicator, reviewed the status of regulations required to be adopted by the State under the Commission's adequacy and compatibility policy, and verified the adoption of regulations with data obtained from the State Regulation Status Sheet that FSME maintains.

During the review period, Washington submitted seven final regulation amendments and four proposed regulations amendments to the NRC for a compatibility review. Current NRC policy

requires that Agreement States adopt certain equivalent regulations or legally binding requirements no later than three years after the effective date of NRC's regulations. Most of the regulation amendments were submitted for review and adopted within the required timeframe. There were a few exceptions where the State coupled regulation amendments to more efficiently process the amendments through the State's adoption process. There were no compatibility issues resulting from the few regulation amendments being overdue.

At the time of the review, there were no overdue amendments. A complete list of upcoming regulation amendments that will need to be addressed can be found on the NRC website at the following address: [http://nrc-stp.ornl.gov/rss\\_regamendments.html](http://nrc-stp.ornl.gov/rss_regamendments.html).

Based on the IMPEP evaluation criteria, the review team recommended, and the MRB agreed, that Washington's performance with respect to the indicator, Compatibility Requirements, be found satisfactory.

#### 4.2 Sealed Source and Device Evaluation Program

In reviewing this indicator, the review team used three subelements to evaluate the Materials Section's performance regarding the Sealed Source and Device (SS&D) Evaluation Program. These subelements were (1) Technical Staffing and Training; (2) Technical Quality of the Product Evaluation Program; and (3) Evaluation of Defects and Incidents Regarding SS&Ds.

In assessing the Materials Section's SS&D evaluation activities, the review team examined information contained in the Office's response to the IMPEP questionnaire for this indicator. The Materials Section conducted one new SS&D evaluation and issued two amendments to existing registrations since the last review. The review team evaluated all three of the SS&D actions processed during the review period and their supporting documents. The review team noted the staff's use of guidance documents and procedures, interviewed staff members involved in the SS&D evaluations, and verified the use of regulations and inspections to enforce commitments made in the applications.

##### 4.2.1 Technical Staffing and Training

The Materials Section has five reviewers who are qualified to perform safety evaluations of SS&D applications. All reviewers have been qualified for a number of years. No new reviewers were qualified during the review period. All have degrees in a physical science or engineering and have attended the NRC's SS&D Workshop. The review team interviewed staff members involved in the reviews and determined that they were familiar with the procedures used in the evaluation of a device/source and had access to applicable reference documents.

##### 4.2.2 Technical Quality of the Product Evaluation Program

The review team evaluated the three SS&D actions issued during the review period. The first action was an amendment to a registration certificate for a moisture gauge, and the other two were a new registration certificate and an amendment for low dose-rate manual brachytherapy seeds. A list of SS&D casework examined can be found in Appendix F.

Analysis of the casework and interviews with staff members confirmed that the Materials Section follows the recommended guidance from NRC's SS&D Workshop and NUREG-1556, Volume 3, Revision 1, "Consolidated Guidance About Materials Licenses – Applications for Sealed Source and Device Evaluation and Registration." The review team confirmed that all applicable and pertinent American National Standards Institute standards, NUREG-1556 Series guides, NRC Regulatory Guides, and applicable references were available and used appropriately in performing the SS&D reviews.

Registration certificates clearly summarized the product evaluations to provide license reviewers with adequate information to license the possession and use of the products. Deficiency letters clearly stated regulatory positions and all health and safety issues were addressed. The review team determined that the product evaluations were thorough, complete, consistent, of acceptable technical quality, and adequately addressed the integrity of the products during use and under accident conditions.

#### 4.2.3 Evaluation of Defects and Incidents Regarding SS&Ds

Ten incidents related to SS&D defects involving the same source registered by the State of Washington were reported during the review period. The source involved was used in brachytherapy applications and the incidents often included damage during routine procedures. A listing of the incidents reviewed by the team can be found in Appendix E.

The review team interviewed Materials Section managers and staff to determine the State's process for evaluating the root causes of radioactive materials incidents involving sealed sources and devices registered by the State and to identify potential generic issues. The managers and staff indicated that the Materials Section does not have a formal process to evaluate incidents for generic defects. Instead, the Materials Section would rely on the manufacturer or distributor of the sources or devices to notify the State of any generic issues.

The review team discussed the importance of conducting an independent assessment of incidents for generic issues due to the national implications of the sealed sources or devices being distributed across the country. With its SS&D evaluation authority, the State has a responsibility to notify its licensees and co-regulators of potential generic issues with sealed sources and devices issued by the State. The review team recommends that the State implement a process to ensure that radioactive material incidents involving sealed sources and devices registered by the State are periodically and independently assessed by the State for generic issues and that any potential generic issues are communicated to licensees and fellow regulators in a timely manner.

Based on the IMPEP evaluation criteria, the review team recommended, and the MRB agreed, that Washington's performance with respect to the indicator, Sealed Source and Device Evaluation Program, be found satisfactory.

#### 4.3 Low-Level Radioactive Waste (LLRW) Disposal Program

In reviewing this indicator, the review team used five subelements to evaluate the Waste Section's performance regarding the LLRW disposal program. These subelements were (1) Technical Staffing and Training, (2) Status of Low-Level Radioactive Waste Disposal



Inspection, (3) Technical Quality of Inspections, (4) Technical Quality of Licensing Actions, and (5) Technical Quality of Incident and Allegation Activities.

The U.S. Ecology Low-Level Radioactive Waste Disposal Facility (LLRWDF) is located in north-central Benton County, about 20 miles northwest of the city of Richland. The facility is situated within the U.S. Department of Energy (DOE) Hanford Site on 100 acres of land. DOE leases the site to the State of Washington, and the State subleases to U.S. Ecology. The LLRWDF is entirely within the Hanford separations area, which covers approximately 82 square miles in the center of the Hanford Site. The U.S. Ecology facility is located within the Hanford 200 Areas, which contain irradiated uranium fuel processing facilities, plutonium separation facilities and the major radioactive waste storage and disposal facilities. The LLRWDF has been in operation since 1965 and has been continuously operated by U.S. Ecology, Inc. (U.S. Ecology or processors). The Waste Section licenses U.S. Ecology, Inc., to receive, handle, process, store, and dispose of LLRW at the Hanford site.

The Waste Section issues two licenses to Perma-Fix to possess and process radioactive material. The processing facility has been in operation since the early 1990s; however, the facility has been Perma-Fix since 2007. The Perma-Fix Northwest Richland (PFNW) facility is located on 35 acres adjacent to the Hanford Site. This facility manages and treats both low-level and mixed low-level radioactive wastes. Perma-Fix has received waste from the Federal Government, reactor operators, medical facilities, and other waste brokers and processors. The main purpose of the facility is volume reduction and stabilization of radioactive waste material.

Although not an official part of the Washington Agreement State Program, the review team noted that the Washington Department of Ecology (Ecology) does have a role in the regulation of the Hanford Site. For instance, Ecology has decision-making input on administrative and technical decisions, such as the design and construction of a permanent cover for closed disposal trenches. Ecology also holds the long-term lease with the Federal Government and is the responsible agency for regulation of non-radioactive, hazardous constituents in disposed waste. Because of this authority, the review team conducted interviews with Ecology staff as part of this IMPEP review. The review team and Ecology staff discussed Ecology's investigation of potential hazardous substances beneath the mixed waste cells, the projected timelines and the expected conclusions. Ecology staff stated they expect to conclude the investigation in December 2013.

#### 4.3.1 Technical Staffing and Training

The Waste Section currently has eight full-time and part-time technical, managerial, and administrative staff members devoted to the LLRW program. The LLRW program is also supported by the Environmental Sciences Section, the Materials Section, and the Air Emissions Section. The staff that currently supports the LLRW program includes the Waste Section Supervisor, an administrative assistant, and staff members with diversified backgrounds in health physics, engineering, and earth sciences. During the review period, the staff was relatively stable; however, in February 2013, the Waste Section lost its most experienced inspector to a licensee. The inspector was replaced with an experienced team member and the Waste Section is training a new hire to eventually be another qualified inspector. The review

team determined that, at the time of the review, the Waste Section's staffing level was adequate to maintain the quality and performance of the LLRW program.

The Waste Section has a documented training and qualification program for staff members to perform licensing, inspection, and investigations of LLRW activities. The Waste Section has an established procedure for staff training consistent with the NRC/OAS Training Working Group Recommendations and IMC 1246.

The review team determined that Waste Section staff members completed the required training and recommended training courses in accordance with Office requirements and consistent with IMC 1246. The Waste Section Supervisor maintains a training file on every staff member and maintains a file that tracks the progress of each employee and provides a benchmark for required training. The Waste Section Supervisor verifies each team member takes the required training courses as well as the necessary inspection and licensing training. Based on interviews with the technical and administrative staff and an examination of staff qualifications, duties, and functions, the review team concluded that the Waste Section staff was highly qualified, with sufficient training, to carry out their regulatory duties.

#### 4.3.2 Status of Low-Level Radioactive Waste Disposal Inspection

The disposal site is inspected annually, consistent with IMC 2800. Annual inspections are completed over the course of the year using partial inspections, with each partial inspection focusing on different areas. In addition to the annual inspections, the Waste Section performs monthly inspections of the site and confirms licensee inspections in accordance with the requirements of the facility license. The review team confirmed the frequency of inspections through an analysis of inspection report files and interviews with the inspectors. The Waste Section Supervisor and inspection staff use a spreadsheet to track the status of inspections. This spreadsheet lists the portion of the annual inspection, the date of last inspection, and the inspector assigned to each portion of the annual inspection. The review team reviewed the spreadsheets and the annual inspection reports from 2008 through 2013.

The review team determined that inspection findings are communicated to the licensee in a timely manner. The Waste Section issues inspection findings to the licensee which is typically issued on site upon completion of an inspection or included in a notice of correction letter issued within 30 days of the inspection.

#### 4.3.3 Technical Quality of Inspections

The Waste Section's inspection procedures detail the inspection preparation requirements, inspection reporting requirements, frequency of inspections, and a checklist of licensing requirements. The procedures also include appropriate forms and example letters for documenting findings. A list of the LLRW inspection casework reviewed can be found in Appendix C.

The review team determined that the Waste Section's monthly and annual inspections were thorough, technically accurate, complete, consistent, and of high quality with sufficient documentation to ensure that the licensee's performance with respect to protecting health and safety was acceptable. A review of the completed inspection reports revealed that inspection

records are reviewed promptly by the Waste Section Supervisor. The review team found that followup inspections addressed previously identified open items and past violations. An annual summary is provided in each file identifying open items for the year and whether or not they were closed. The files contain the inspection checklist, field notes, notices to the licensee, and some digital photographs of the site. The on-site files include information on the waste generator, weekly summary of shipments, fence-line surveys performed by the inspectors, and package (waste container) inspections. The review team also determined that supervisory accompaniments of each inspector were completed annually and documented.

On April 17-18, 2013, a review team member accompanied a Waste Section inspector during inspections of US Ecology and Perma-Fix. The inspector conducted entrance meetings with the licensees, explaining the purpose, the duration and the expectations for the inspection. The inspector was well prepared and thorough in her review of the aspects of the licensees radiation safety programs including site security, external dosimetry, radiological surveys, vehicle surveys, and postings. The inspector conducted multiple interviews with licensee safety staff and supervisors. The inspector covered the scope of the inspections, discussed the status of previously identified items of noncompliance, and clearly articulated any current items of noncompliance. The inspector conducted exit interviews with management to explain any findings. During the accompaniments, the inspector demonstrated appropriate performance-based inspection techniques and knowledge of the regulations. The inspections were adequate to assess radiological health and safety at the licensed facilities. Appendix C contains a list of the inspection accompaniments performed for this indicator.

#### 4.3.4 Technical Quality of Licensing Actions

The review team evaluated the technical quality of eight of the Waste Section's licensing actions issued since the last IMPEP review. The review team also reviewed portions of the 2004 Environmental Impact Statement (EIS). During the review period the licensing actions included renewals and technical licensing amendments. These amendments involved revisions to the standards manual, changes in monitoring frequency, and management changes. A list of the casework reviewed can be found in Appendix D.

The Waste Section's licensing program for LLRW disposal included the completion of an EIS related to key decisions at the disposal facility; license renewal; implementation of new security requirements; investigation of ground contaminants, pursuant to the State Model Toxics Control Act; and expansion of the definition of byproduct material, pursuant to the Energy Policy Act of 2005. The Waste Section and US Ecology jointly prepared the EIS. The EIS provided a summary of the bases for regulatory decisions regarding relicensing, allowable amounts of diffuse waste, and a permanent disposal unit cover. During this IMPEP the review team also reviewed portions of the final EIS, and interviewed most of the staff involved in the preparation of these documents. The review team found that these documents were thorough, complete, consistent, and of acceptable technical quality.

The review team found that the licensing actions in general were thorough, complete, consistent, and of high quality, with health, safety, and security issues properly addressed.

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

The review team found that the Waste Section has procedures in place for handling incidents and allegations. The procedures for handling incidents include information on what constitutes an incident, appropriate documentation of an incident, reference to the NRC's abnormal occurrence criteria for Agreement States, and tracking of incidents by management. The procedures for handling allegations include information on protecting the identity of the allegor, documentation of the allegation, and tracking the allegation by management.

During the review period, the Waste Section received five incidents and one allegation pertaining to the LLRW disposal program. A list of the incident files reviewed can be found in Appendix E. The review team evaluated the Waste Section's response to each incident by verifying the correct procedures were followed, that timely notifications were made, and appropriate measures were taken to close the incidents. The review team also evaluated the Waste Section's allegation handling and found it was done according to procedure. Each step in the procedure and allegation protocol was followed, documented, and appropriate level of management notified.

Based on the IMPEP evaluation criteria, the review team recommended, and the MRB agreed, that Washington's performance with respect to the indicator LLRW Disposal Program, be found satisfactory.

#### 4.4 Uranium Recovery Program

In reviewing this indicator, the review team used five subelements to evaluate the Waste Section's performance regarding the uranium recovery program. These subelements were (1) Technical Staffing and Training, (2) Status of Uranium Recovery Inspection Program, (3) Technical Quality of Inspections, (4) Technical Quality of Licensing Actions, and (5) Technical Quality of Incident and Allegation Activities.

At the time of the review, the Waste Section had one licensed conventional mill site: the Dawn Mining Company (Dawn). This site was placed in shutdown status and initiated reclamation and decommissioning activities in 2001. The process related buildings and structures were decommissioned and buried in 2003. The only activities at the site are related to surface reclamation and groundwater monitoring.

##### 4.4.1 Technical Staffing and Training

The review team evaluated the Waste Section's uranium recovery program staffing level, the technical qualifications of the staff, staff training, and staff turnover. The evaluation included general examination of the qualifications of the inspectors and licensing personnel, and interviews with uranium recovery program staff and management. At the time of the review, two full-time equivalents (FTE) were devoted to the uranium recovery program to perform inspections and licensing activities for the Dawn site. The Waste Section's uranium recovery program has a wide range of technical expertise including: health physics, engineering, geohydrology, and geochemistry. The review team determined that the Waste Section's staffing level is adequate to maintain the quality and performance of the uranium recovery program.

Interviews with uranium recovery staff and reviews of training and qualification records revealed that the uranium recovery staff is experienced, technically competent, and has a good understanding of regulatory processes and requirements. The uranium recovery staff has the health physics, engineering, and hydrology expertise necessary to adequately regulate the reclamation activities at the Dawn site. Documentation of training and qualification of the uranium recovery staff, including summaries of education and experience, was in the Waste Section's personnel files and was up to date.

#### 4.4.2 Status of Uranium Recovery Inspection Program

The review team evaluated the uranium recovery program inspection frequency, overdue inspections, and timely issuance of inspection reports and findings to the licensee. The review team's evaluation is based on the Office's response to the IMPEP questionnaire relative to the uranium recovery program, inspection casework files, and interviews with inspection staff and management. A list of the inspection casework reviewed can be found in Appendix C.

The Waste Section performed 28 inspections at the Dawn site between July 2008 and April 2013. This included 5 annual radiation safety inspections and 23 routine field inspections. The annual radiation safety inspections covered all aspects of the uranium recovery program including: site security, personnel monitoring, radiation protection program audit, training, radiological controls and surveys, operations, environmental monitoring, instrumentation, site posting, and respiratory protection, site tour, observation of operations, and personnel interviews. The routine inspections included observations of the reclamation activities at the Dawn site, including collection of groundwater samples for analysis.

Based on the evaluation of inspection files, the review team determined that the Waste Section's inspection frequency exceeded the requirements of 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.

The review team determined that inspection reports were issued within 30 days of inspections. The Waste Section Supervisor promptly reviewed all inspection reports. Appropriate followup actions were conducted when items of an infraction, deficiency, or noncompliance were identified. Inspection casework files were easily retrieved and accessible.

#### 4.4.3 Technical Quality of Inspections

The review team examined inspection files, inspection reports, and enforcement actions. The review team noted that the Waste Section's inspection program and procedures were consistent with NRC Inspection Procedure 87654, "Uranium Mill, In-Situ Leach Uranium Recovery, 11e.(2) Byproduct Material Disposal Site Decommissioning Inspection." Inspectors typically and appropriately observed licensee operations and made independent measurements during inspections, as appropriate. Inspectors used relevant procedures with checklists, previous inspection reports, and other background information for implementing their inspections. Annual comprehensive inspections covered all appropriate functional areas. The review team found that the inspection reports provided appropriate depth of coverage, addressed license conditions and the regulations, and demonstrated that the inspectors pursued corrective actions for items of an infraction, deficiency, or noncompliance that were identified.

Supervisor accompaniments of the lead/radiation safety inspector were performed annually. The accompaniment documentation contained comments on inspector's performance and appeared to provide a sufficient evaluation for the inspector. The review team found that the Waste Section Supervisor routinely met with the uranium recovery inspectors to review inspection findings and to plan followup strategy regarding corrective actions.

On April 16, 2013, a review team member accompanied the Waste Section's lead inspector for the uranium program at the Dawn site. An engineer and a hydrochemist from the uranium recovery program joined the lead inspector at the Dawn site. The review team members evaluated the lead inspector's performance. The inspection focused on the site general conditions, including reclamation progress, training evaluation of new personnel, follow up on items of concern from previous annual inspection, and environmental monitoring stations. The lead inspector was well prepared and conducted proper entrance and exit interviews with licensee management and safety staff. The lead inspector reviewed training records for the new personnel and conducted interviews with licensee's staff during the course of the inspection to ascertain perspective on licensee commitment to safety and training. During the accompaniment, the lead inspector used instrumentation to perform independent measurements and demonstrated performance-based inspection techniques. A listing of the inspector accompaniment can be found in Appendix C.

#### 4.4.4 Technical Quality of Licensing Actions

The Waste Section utilized regulatory criteria, checklist, and applicable portions of NUREG-1620, "Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act of 1978," in performing licensing actions for the uranium recovery program. Licensing actions for the review period included one renewal and two amendments for the Dawn Site. The review team's evaluation is based on the Office's response to the IMPEP questionnaire relative to the uranium recovery program, licensing casework files, and interviews with staff and management. Appendix D lists the licensing files reviewed.

The Dawn Site license has been in timely renewal since January 2012. At the time of the review, the licensing action for the renewal of Dawn site was pending. The licensee submitted the renewal application on December 30, 2011. The application was administratively completed on January 26, 2012. The Waste Section is in the final review stage of engineering and hydrologic reviews. Upon completion of the engineering and hydrologic reviews, there will be a notice to the public process. The Waste Section anticipates the renewal license will be issued by August 2013.

The Waste Section completed two amendments related to the extension of disposal of sludge from the Midnight Mine Water Treatment Plant into the Tailing Disposal Area 4. The initial authorization for sludge disposal was granted to the licensee in 2001. The amendments were issued in 2009 and 2011. The review team concluded that these licensing actions were thorough and the license conditions were clear and well documented. The review team concluded that the Waste Section evaluation was of acceptable technical quality.

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

For the review period, the Waste Section did not receive reports of any incidents or allegations related to the uranium recovery program. The review team found that the Waste Section has appropriate procedures in place for handling incidents and allegations.

Based on the IMPEP evaluation criteria, the review team recommended, and the MRB agreed, that Washington'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, Washington's performance was found satisfactory for all performance indicators reviewed. The review team made one recommendation regarding program performance by the State. Accordingly, the review team recommended, and the MRB agreed, that the Washington Agreement State Program be found adequate to protect public health and safety and compatible with the NRC's program. Based on the results of the current IMPEP review, the review team recommended that the next full IMPEP review take place in approximately four years, with a periodic meeting in one year in order to monitor the Office's transition to a new director. The MRB, however, directed that the next IMPEP review be held in five years with a periodic meeting to be held in one year. The MRB further directed that the need for a second periodic meeting in the review period would be determined after the periodic meeting in May 2014.

Below is the review team's recommendation, as mentioned in the report, for evaluation and implementation by the State:

The review team recommends that the State implement a process to ensure that radioactive material incidents involving sealed sources and devices registered by the State are periodically and independently assessed by the State for generic issues and that any potential generic issues are communicated to licensees and fellow regulators in a timely manner.

## LIST OF APPENDIXES

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Appendix C	Inspection Casework Reviews
Appendix D	License Casework Reviews
Appendix E	Incident Casework Reviews
Appendix F	Sealed Source and Device Casework Reviews



## APPENDIX A

### IMPEP REVIEW TEAM MEMBERS

<b>Name</b>	<b>Area of Responsibility</b>
Aaron McCraw, Region III	Team Leader Technical Staffing and Training Compatibility Requirements Inspector Accompaniments
Randy Erickson, Region IV	Status of Materials Inspection Program Technical Quality of Inspections
Farrah Gaskins, Region I	Technical Quality of Licensing Actions
Stephen Poy, FSME	Technical Quality of Incident and Allegation Activities Sealed Source and Device Evaluation Program
Maurice Heath, FSME	Low-Level Radioactive Waste Disposal Program Inspector Accompaniments
Muhammadali Abbaszadeh, Texas	Uranium Recovery Program Inspector Accompaniments

Latischa Hanson, Region IV assisted with the team's review of Technical Quality of Inspections.

APPENDIX B

WASHINGTON ORGANIZATION CHARTS

ADAMS ACCESSION NO.: ML13112A244

## APPENDIX C

### INSPECTION CASEWORK REVIEWS

NOTE: CASEWORK LISTED WITHOUT COMMENT IS INCLUDED FOR COMPLETENESS.

File No.: 1 Licensee: Bradken Atlas Inspection Type: Routine, Announced Inspection Date: 2/26/13	License No.: WN-IR066-1 Priority: 1 Inspector: VD
File No.: 2 Licensee: St. John Medical Center Inspection Type: Routine, Announced Inspection Date: 7/26/11	License No.: WN-M066-1 Priority: 2 Inspector: VD
File No.: 3 Licensee: Deaconess Medical Center Inspection Type: Routine, Announced Inspection Date: 10/27/10	License No.: WN-M0237-1 Priority: 2 Inspector: AG
File No.: 4 Licensee: Lower Columbia Nuclear Medicine & PET Imaging Inspection Type: Routine, Unannounced Inspection Date: 3/27/09	License No.: WN-M0209-1 Priority: 2 Inspector: AG
File No.: 5 Licensee: Puget Sound Radiosurgery Inspection Type: Routine, Announced Inspection Date: 12/22/11	License No.: WN-M0268-1 Priority: 2 Inspector: CD
File No.: 6 Licensee: Tri-Cities Cancer Center Inspection Type: Routine, Unannounced Inspection Date: 10/8/09	License No.: WN-M0204-1 Priority: 2 Inspector: CD
File No.: 7 Licensee: Oregon Washington Laboratories Inspection Type: Routine, Announced Inspection Date: 6/23/09	License No.: WN-IR070-1 Priority: 1 Inspector: JK
File No.: 8 Licensee: International Inspection Inspection Type: Routine, Announced Inspection Date: 5/29/12	License No.: WN-IR-066-1 Priority: 1 Inspectors: JS, SM

File No.: 9

Licensee: Northwest Hospital Gamma Knife  
Inspection Type: Routine, Announced  
Inspection Date: 10/5/10

License No.: WN-M0201-01  
Priority: 2  
Inspector: JS

File No.: 10

Licensee: Battelle Pacific Northwest National Laboratories  
Inspection Type: Routine, Announced  
Inspection Date: 10/21/09

License No.: WN-L027-1  
Priority: 2  
Inspectors: JS, BH

File No.: 11

Licensee: Acuren Inspection  
Inspection Type: Routine, Unannounced  
Inspection Date: 5/18/09

License No.: WN-IR067-1  
Priority: 1  
Inspector: PW

File No.: 12

Licensee: Northwest Hospital Gamma Knife  
Inspection Type: Routine, Announced  
Inspection Date: 12/10/08

License No.: WN-M0201-1  
Priority: 1  
Inspectors: PW, CD

File No.: 13

Licensee: Spokane Washington Hospital Company  
Inspection Type: Routine, Announced  
Inspection Date: 7/17/09

License No.: WN-M005-1  
Priority: 2  
Inspector: SM

File No.: 14

Licensee: Acuren Inspection  
Inspection Type: Routine, Unannounced  
Inspection Dates: 7/19-20/11

License No.: WN-IR067-1  
Priority: 1  
Inspector: VD

File No.: 15

Licensee: Skagit Valley Hospital  
Inspection Type: Routine, Unannounced  
Inspection Dates: 11/7/10

License No.: WN-M0196-1  
Priority: 2  
Inspector: VD

File No.: 16

Licensee: Team Industrial Services  
Inspection Type: Initial, Unannounced  
Inspection Date: 1/25/11

License No.: WN-IR073-1  
Priority: 1  
Inspector: BH

File No.: 17

Licensee: Spokane Industries  
Inspection Type: Routine, Unannounced  
Inspection Date: 3/12/13

License No.: WN-IR049-1  
Priority: 1  
Inspector: BH

File No.: 18

Licensee: Providence Sacred Heart Medical Center  
Inspection Type: Routine, Unannounced  
Inspection Dates: 2/14-15/12

License No.: WN-M031-1  
Priority: 2  
Inspector: BH

File No.: 19

Licensee: Whitman County Public Works  
Inspection Type: Initial, Unannounced  
Inspection Date: 9/14/12

License No.: WN-I0328-1  
Priority: 4  
Inspector: JK

File No.: 20

Licensee: Mason General Hospital  
Inspection Type: Routine, Unannounced  
Inspection Date: 1/10/13

License No.: WN-M0214-1  
Priority: 2  
Inspectors: JK, CD

File No.: 21

Licensee: Construction Testing Labs  
Inspection Type: Routine, Unannounced  
Inspection Date: 4/1/13

License No.: WN-L092-1  
Priority: 4  
Inspector: JK

File No.: 22

Licensee: Overlake Medical  
Inspection Type: Routine, Unannounced  
Inspection Date: 4/4/13

License No.: WN-M065-1  
Priority: 2  
Inspector: JS

File No.: 23

Licensee: Mistras Group Inc.  
Inspection Type: Routine, Announced  
Inspection Date: 4/5/13

License No.: WN-IR011-1  
Priority: 1  
Inspector: JK

File No.: 24

Licensee: Northwest Hospital & Medical Center  
Inspection Type: Routine, Announced  
Inspection Date: 4/2/13

License No.: WN-M004-1/M0201-1  
Priority: 2  
Inspector: VD

File No.: 25

Licensee: Grays Harbor Community Hospital  
Inspection Type: Routine, Unannounced  
Inspection Date: 4/2/13

WN-License No.: WN-M091-1  
Priority: 2  
Inspector: JK

File No.: 26

Licensee: Dade Moeller  
Inspection Type: Reciprocity, Unannounced  
Inspection Date: 7/24/08

WN-License No.: WN-RECIP-197  
Priority: 3  
Inspector: AG

File No.: 27

Licensee: Providence Everett Medical Center  
Inspection Type: Routine, Unannounced  
Inspection Date: 4/3/13

License No.: WN-M0135-1  
Priority: 2  
Inspector: BH

#### LOW LEVEL RADIOACTIVE WASTE INSPECTION CASEWORK

File No.: 28

Licensee: U.S. Ecology, Inc.  
Inspection Type: Routine, Announced  
Inspection Dates: Various

License No.: WN-I019-2  
Priority: 1  
Inspectors: Various

File No.: 29

Licensee: Perma Fix NW  
Inspection Type: Routine, Announced  
Inspection Dates: Various

License No.: WN-I0393-1  
Priority: 1  
Inspectors: Various

#### URANIUM RECOVERY INSPECTION CASEWORK

File No.: 30

Licensee: Dawn Mining Company  
Inspection Type: Routine, Announced  
Inspection Date: 10/7/08

License No.: WN-1043-2  
Priority: 1  
Inspectors: DS, ME, DT

File No.: 31

Licensee: Dawn Mining Company  
Inspection Type: Routine, Announced  
Inspection Date: 10/7/09

License No.: WN-1043-2  
Priority: 1  
Inspectors: DS, ME, KS, SP

File No.: 32

Licensee: Dawn Mining Company  
Inspection Type: Routine, Announced  
Inspection Date: 10/20/10

License No.: WN-1043-2  
Priority: 1  
Inspectors: DS, KS, SP

File No.: 33

Licensee: Dawn Mining Company  
Inspection Type: Routine, Announced  
Inspection Date: 11/2/11

License No.: WN-1043-2  
Priority: 1  
Inspectors: DS, KS, JR, SP

File No.: 34

Licensee: Dawn Mining Company  
Inspection Type: Routine, Announced  
Inspection Date: 11/14/12

License No.: WN-1043-2  
Priority: 1  
Inspectors: DS, SP, JR, DT

### INSPECTOR ACCOMPANIMENTS

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

Accompaniment No.: 1  
Licensee: Construction Testing Laboratories, Inc. License No.: WN-L092-1  
Inspection Type: Routine, Announced Priority: 5  
Inspection Date: 4/1/13 Inspector: JK

Accompaniment No.: 2  
Licensee: Northwest Hospital Gamma Knife Center License No.: WN-M0201-1  
Inspection Type: Routine, Unannounced Priority: 2  
Inspection Date: 4/2/13 Inspector: VD

Accompaniment No.: 3  
Licensee: Northwest Hospital and Medical Center License No.: WN-M004-1  
Inspection Type: Routine, Unannounced Priority: 3  
Inspection Date: 4/2/13 Inspector: VD

Accompaniment No.: 4  
Licensee: Providence Everett Medical Center License No.: WN-M0135-1  
Inspection Type: Routine, Unannounced Priority: 2  
Inspection Date: 4/3/13 Inspector: BH

Accompaniment No.: 5  
Licensee: Overlake Hospital Medical Center License No.: WN-M065-1  
Inspection Type: Routine, Unannounced Priority: 2  
Inspection Date: 4/4/13 Inspector: JS

Accompaniment No.: 6  
Licensee: Mistras Group, Inc. License No.: WN-IR011-1  
Inspection Type: Routine, Announced Priority: 1  
Inspection Date: 4/5/13 Inspector: JK

### LOW-LEVEL RADIOACTIVE WASTE INSPECTION ACCOMPANIMENTS

Accompaniment No.: 7  
Licensee: US Ecology, Inc. License No.: WN-I019-2  
Inspection Type: Routine, Announced Priority: 1  
Inspection Dates: 4/17-18/13 Inspector: KS

Accompaniment No.: 8  
Licensee: Perma-Fix License No.: WN-I0393-1  
Inspection Type: Routine, Unannounced Priority: 1  
Inspection Date: 4/18/13 Inspector: KS

URANIUM RECOVERY INSPECTION ACCOMPANIMENT

Accompaniment No.: 9

Licensee: Dawn Mining Company

Inspection Type: Routine, Announced

Inspection Date: 4/16/13

License No.: WN-1043-2

Priority: 1

Inspectors: DS, SP, JR



APPENDIX D

LICENSE CASEWORK REVIEWS

NOTE: CASEWORK LISTED WITHOUT COMMENT IS INCLUDED FOR COMPLETENESS.

File No.: 1 Licensee: IsoRay medical Type of Action: Renewal Date Issued: 12/10/12	License No.: WN-L0213-1 Amendment No.: 16 License Reviewer: JS
File No.: 2 Licensee: Swedish Medical Center Type of Action: Renewal Date Issued: Pending	License No: WN-M008-1 Amendment No.: 73 License Reviewer: CD
File No.: 3 Licensee: Deaconess Medical Center Type of Action: Renewal Date Issued: 5/1/12	License No.: WN-M0237-1 Amendment No.: 11 License Reviewer: CD
File No.: 4 Licensee: Battelle Pacific Northwest Laboratories Type of Action: Renewal Date Issued: 11/30/11	License No.: WN-L027-1 Amendment No.: 25 License Reviewer: JS
File No.: 5 Licensee: Siemens Medical Solutions Type of Action: Renewal Date Issued: 3/25/10	License No: WN-I030-1 Amendment No.: 19 License Reviewer: VD
File No.: 6 Licensee: Cardinal Health 414 Type of Action: Renewal Date Issued: 10/15/12	License No.: WN-NP008-1 Amendment No.: 25 License Reviewer: BH
File No.: 7 Licensee: Conagra Foods Weston, Inc. Type of Action: Renewal Date Issued: 6/23/10	License No.: WN-I082-1 Amendment No.: 16 License Reviewer: SM
File No.: 8 Licensee: Pacific Testing and Inspection Type of Action: Renewal Date Issued: 6/27/12	License No: WN-I0573-1 Amendment No.: 3 License Reviewer: PW

File No.: 9

Licensee: Eastern Washington University  
Type of Action: Renewal  
Date Issued: 1/27/09

License No.: WN-C025-1  
Amendment No.: 17  
License Reviewer: JS

File No.: 10

Licensee: Western Fire and Safety  
Type of Action: Renewal  
Date Issued: 10/23/12

License No.: WN-I0302-1  
Amendment No.: 8  
License Reviewer: JK

File No.: 11

Licensee: Acuren Inspection  
Type of Action: Amendment  
Date Issued: 12/8/10

License No: WN-IR067-1  
Amendment No.: 13  
License Reviewer: CL

File No.: 12

Licensee: Fred Hutchinson Research Center  
Type of Action: Amendment  
Date Issued: 12/11/09

License No.: WN-L042-1  
Amendment No.: 66  
License Reviewer: JK

File No.: 13

Licensee: Washington State University  
Type of Action: Amendment  
Date Issued: 10/23/08

License No.: WN-C003-1  
Amendment No.: 73  
License Reviewer: AG

File No.: 14

Licensee: Gonzaga University  
Type of Action: Amendment  
Date Issued: 3/23/10

License No: WN-C0012-1  
Amendment No.: 24  
License Reviewer: VD

File No.: 15

Licensee: Anvil Corporation  
Type of Action: Termination  
Date Issued: 9/17/10

License No.: WN-IR031-1  
Amendment No.: 45  
License Reviewer: VD

File No.: 16

Licensee: Molecular Epidemiology  
Type of Action: Termination  
Date Issued: 6/2/11

License No.: WN-L0208-1  
Amendment No.: 6  
License Reviewer: AG

File No.: 17

Licensee: MA DE Atley  
Type of Action: New  
Date Issued: 6/2/11

License No: WN-I0598-1  
Amendment No.: N/A  
License Reviewer: PW

File No.: 18  
Licensee: Quality Inspection Services  
Type of Action: New  
Date Issued: 11/19/12

License No.: WN-IR074-1  
Amendment No.: N/A  
License Reviewer: CL

File No.: 19  
Licensee: Seattle Procure Management, LLC  
Type of Action: New  
Date Issued: 6/12/12

License No.: WN-M0312-1  
Amendment No.: N/A  
License Reviewer: BH

LOW LEVEL RADIOACTIVE WASTE LICENSE CASEWORK

File No.: 20  
Licensee: Perma-Fix  
Type of Action: Amendment  
Inspection Date: 4/10/09

License No.: WN-I0393-1  
Amendment No.: 25  
License Reviewer: SM

File No.: 21  
Licensee: Perma-Fix NW  
Type of Action: Amendment  
Date Issued: 4/18/10

License No.: WN-I0393-1  
Amendment No.: 27  
License Reviewer: SM

File No.: 22  
Licensee: Perma-Fix NW  
Type of Action: Amendment  
Date Issued: 8/30/12

License No.: WN-I0393-1  
Amendment No.: 31  
License Reviewer: KS

File No.: 23  
Licensee: US Ecology, Inc.  
Type of Action: Amendment  
Date Issued: 5/12/09

License No.: WN-I019-2  
Amendment No.: 33  
License Reviewer: SM

File No.: 24  
Licensee: US Ecology, Inc.  
Type of Action: Amendment  
Date Issued: 10/23/09

License No.: WN-I019-2  
Amendment No.: 34  
License Reviewer: SM

File No.: 25  
Licensee: US Ecology, Inc.  
Type of Action: Amendment  
Date Issued: 8/2/10

License No.: WN-I019-2  
Amendment No.: 35  
License Reviewer: SM

File No.: 26  
Licensee: US Ecology, Inc.  
Type of Action: Amendment  
Date Issued: 11/21/11

License No.: WN-I019-2  
Amendment No.: 36  
License Reviewer: SM

File No.: 27

Licensee: US Ecology, Inc.  
Type of Action: Amendment  
Date Issued: 4/20/12

License No.: WN-I019-2  
Amendment No.: 39  
License Reviewer: KS

URANIUM RECOVERY LICENSE CASEWORK

File No.: 28

Licensee: Dawn Mining Company  
Type of Action: Amendment  
Date Issued: 4/15/09

License No.: WN-1043-2  
Amendment No.: 25  
License Reviewers: DS, KS, JR

File No.: 29

Licensee: Dawn Mining Company  
Type of Action: Amendment  
Date Issued: 8/16/11

License No.: WN-1043-2  
Amendment No.: 26  
License Reviewers: DS, KS, JR

File No.: 30

Licensee: Dawn Mining Company  
Type of Action: Renewal  
Date Issued: Pending

License No.: WN-1043-2  
Amendment No.: Pending  
License Reviewers: DS, KS, JR, SP

## APPENDIX E

### INCIDENT CASEWORK REVIEWS

NOTE: CASEWORK LISTED WITHOUT COMMENT IS INCLUDED FOR COMPLETENESS.

File No.: 1

Licensee: Krazan & Associates

Date of Incident: 6/17/08

Investigation Date: 6/17/08

License No.: WN-10431

NMED No.: 080356

Type of Incident: Damaged Gauge

Type of Investigation: Site

File No.: 2

Licensee: Washington State University

Date of Incident: 6/24/08

Investigation Date: 6/24/08

License No.: WN-C003

NMED No.: 080374

Type of Incident: Leaking Source

Type of Investigation: Site

File No.: 3

Licensee: N and P Partnership

Date of Incident: 8/22/08

Investigation Date: 1/22/13

License No.: General

NMED No.: N/A

Type of Incident: Lost/Stolen Material

Type of Investigation: Site

Comment: This incident was not report to the NRC Headquarters Operations Center. The State indicated that this event would be submitted for inclusion in NMED in the near future.

File No.: 4

Licensee: Seattle Household Hazardous Waste

Date of Incident: 9/18/08

Investigation Date: 1/24/13

License No.: General

NMED No.: N/A

Type of Incident: Lost/Stolen Material

Type of Investigation: Site

Comment: This incident was not report to the NRC Headquarters Operations Center. The State indicated that this event would be submitted for inclusion in NMED in the near future.

File No.: 5

Licensee: Northwest Inspection

Date of Incident: 9/30/08

Investigation Date: 9/30/08

License No.: WN-IR065

NMED No.: 080639

Type of Incident: Equipment

Type of Investigation: Site

File No.: 6

Licensee: Cancer Care Northwest Pet Center

Date of Incident: 4/14/09

Investigation Date: 4/14/09

License No.: WN-M0227

NMED No.: 090466

Type of Incident: Equipment

Type of Investigation: Site

File No.: 7

Licensee: Georgia Pacific  
Date of Incident: 4/16/09  
Investigation Date: 4/16/09

License No.: General  
NMED No.: N/A  
Type of Incident: Lost/Stolen Material  
Type of Investigation: Site

Comment: This incident was not report to the NRC Headquarters Operations Center. The State indicated that this event would be submitted for inclusion in NMED in the near future.

File No.: 8

Licensee: Longview Fibre  
Date of Incident: 6/15/09  
Investigation Date: 6/15/09

License No.: WN-R0205  
NMED No.: 090561  
Type of Incident: Equipment  
Type of Investigation: Site

File No.: 9

Licensee: Cole and Associates  
Date of Incident: 6/15/09  
Investigation Date: 6/15/09

License No.: WN-R0979  
NMED No.: 090632  
Type of Incident: Lost/Stolen Material  
Type of Investigation: Site

File No.: 10

Licensee: Alano Club  
Date of Incident: 11/24/09  
Investigation Date: 11/24/09

License No.: General License  
NMED No.: N/A  
Type of Incident: Lost/Stolen Material  
Type of Investigation: Site

Comment: This incident was not report to the NRC Headquarters Operations Center. The State indicated that this event would be submitted for inclusion in NMED in the near future.

File No.: 11

Licensee: Mistras Group  
Date of Incident: 12/15/09  
Investigation Date: 12/15/09

License No.: WN-IR011  
NMED No.: 090886  
Type of Incident: Equipment  
Type of Investigation: Site

File No.: 12

Licensee: Georgia Pacific  
Date of Incident: 12/30/09  
Investigation Date: 12/30/09

License No.: WN-I0228-1  
NMED No.: 100005  
Type of Incident: Equipment  
Type of Investigation: Site

File No.: 13

Licensee: Georgia Pacific  
Date of Incident: 1/26/09  
Investigation Date: 8/1/09

License No.: WN-M0225  
NMED No.: 100196  
Type of Incident: Equipment  
Type of Investigation: Site

File No.: 14

Licensee: Freedom Marine Engineering

Date of Incident: 5/21/10

Investigation Date: 1/23/13

License No.: General

NMED No.: N/A

Type of Incident: Lost/Stolen

Type of Investigation: Site

Comment: This incident was not report to the NRC Headquarters Operations Center. The State indicated that this event would be submitted for inclusion in NMED in the near future.

File No.: 15

Licensee: Westport Shipyard

Date of Incident: 6/2/11

Investigation Date: 7/10/11

License No.: General

NMED No.: 110364

Type of Incident: Lost/Stolen Material

Type of Investigation: Site

File No.: 16

Licensee: Bruker AXS Handheld

Date of Incident: 5/1/11

Investigation Date: 5/23/11

License No.: WN-I0282

NMED No.: 120324

Type of Incident: Lost/Stolen Material

Type of Investigation: Site

File No.: 17

Licensee: Eastern Washington University

Date of Incident: 7/25/11

Investigation Date: 9/27/11

License No.: General

NMED No.: N/A

Type of Incident: Lost/Stolen Material

Type of Investigation: Site

File No.: 18

Licensee: Cancer Care Northwest Pet Center

Date of Incident: 12/19/12

Investigation Date: 12/19/12

License No.: WN-M0227

NMED No.: 130050

Type of Incident: Medical Event

Type of Investigation: Site

#### SEALED SOURCE AND DEVICE INCIDENT REVIEWS

File No.: 19

Licensee: Isoray

Date of Incident: 2/19/09

Investigation Date: 2/20/09

License No.: WN-L0213

NMED No.: 090376

Type of Incident: Damaged/Leaking Source

Type of Investigation: Telephone

File No.: 20

Licensee: Chicago Prostate Cancer Center

Date of Incident: 2/25/09

Investigation Date: 2/26/09

License No.: IL-02015-01

NMED No.: 090418

Type of Incident: Damaged/Leaking Source

Type of Investigation: Manufacturer's Site

File No.: 21

Licensee: Geisinger Health Systems  
Date of Incident: 2/26/09  
Investigation Date: 2/26/09

License No.: PA-0006  
NMED No.: 090418  
Type of Incident: Lost/Stolen Material  
Type of Investigation: Manufacturer's Site

File No.: 22

Licensee: Valley Hospital  
Date of Incident: 7/29/09  
Investigation Date: 8/6/09

License No.: 29-03845-01  
NMED No.: 090662  
Type of Incident: Medical Event  
Type of Investigation: Manufacturer's Site

File No.: 23

Licensee: Bristol Hospital  
Date of Incident: 1/12/10  
Investigation Date: 3/1/10

License No.: 06-02057-01  
NMED No.: 100290  
Type of Incident: Medical Event  
Type of Investigation: Site

File No.: 24

Licensee: Warren General Hospital  
Date of Incident: 11/2/10  
Investigation Date: 11/2/10

License No.: PA-0083  
NMED No.: 100553  
Type of Incident: Medical Event  
Type of Investigation: Site

File No.: 25

Licensee: Mount Nittany  
Date of Incident: 3/13/12  
Investigation Date: 3/15/12

License No.: PA-0126  
NMED No.: 120606  
Type of Incident: Lost/Stolen Material  
Type of Investigation: Site

File No.: 26

Licensee: Medical Center Central Georgia  
Date of Incident: 8/1/11  
Investigation Date: 8/2/11

License No.: GA-0364-1  
NMED No.: 120635  
Type of Incident: Lost/Stolen Material  
Type of Investigation: Site

File No.: 27

Licensee: Piedmont Fayette Hospital  
Date of Incident: 7/6/10  
Investigation Date: 7/6/10

License No.: GA-1340-1  
NMED No.: 120675  
Type of Incident: Medical Event  
Type of Investigation: Site

File No.: 28

Licensee: Geisinger Health Systems  
Date of Incident: 10/20/12  
Investigation Date: 10/22/12

License No.: PA-0006  
NMED No.: 130088  
Type of Incident: Lost/Stolen Material  
Type of Investigation: Site



LOW-LEVEL RADIOACTIVE WASTE INCIDENT REVIEWS

File No.: 29

Licensee: Perma-Fix Northwest

Date of Incident: 4/17/08

Investigation Date: 4/17/08

License No.: WN-I0393-1

NMED Log No.: 080249

Type of Incident: Contamination

Type of Investigation: Site

File No.: 30

Licensee: Perma-Fix Northwest

Date of Incident: 2/3/09

Investigation Date: 4/13/09

License No.: WN-I0393-1

NMED Log No.: 090452

Type of Incident: Overexposure

Type of Investigation: Site

File No.: 31

Licensee: Perma-Fix Northwest

Date of Incident: 12/4/12

Investigation Date: 4/29/13

License No.: WN-I0393-1

NMED Log No.: 130017

Type of Incident: Transportation

Type of Investigation: Site

File No.: 32

Licensee: US Ecology, Inc.

Date of Incident: 12/11/12

Investigation Date: N/A

License No.: WN-I019-2

NMED Log No.: 130018

Type of Incident: Transportation

Type of Investigation: Licensee Report

File No.: 33

Licensee: Perma Fix Northwest

Date of Incident: 3/21/13

Investigation Date: 4/4/13

License No.: WN-I0393-1

NMED Log No.: 130162

Type of Incident: Transportation

Type of Investigation: Site

APPENDIX F

SEALED SOURCE & DEVICE CASEWORK REVIEWS

NOTE: CASEWORK LISTED WITHOUT COMMENT IS INCLUDED FOR COMPLETENESS.

File No.: 1

Registry No.: WA-1220-D-102-S  
Applicant Name: Isoray Medical, Inc.  
Date of Issue: 11/21/11

SS&D Type: (AA) Manual Brachytherapy  
Type of Action: New  
Reviewers: CD, AG

File No.: 2

Registry No.: WA-1220-D-102-S  
Applicant Name: Isoray Medical, Inc.  
Date of Issue: 2/15/12

SS&D Type: (AA) Manual Brachytherapy  
Type of Action: Amendment  
Reviewers: CD, AG

File No.: 3

Registry No.: WA-01111-D-102-G  
Applicant Name: Acrowood Corp.  
Date of Issue: 7/10/09

SS&D Type: (H) General Neutron  
Source Applications  
Type of Action: Amendment  
Reviewers: SM, CL

ATTACHMENT

July 10, 2013 Letter from Maryanne Guichard  
Washington's Response to the Draft Report  
ADAMS Accession No.: ML1396A003