

December 8, 2003

Dianne R. Nielson, Ph.D.  
Executive Director  
Department of Environmental Quality  
168 North 1950 West  
Salt Lake City, UT 84116

Dear Dr. Nielson:

On September 25, 2003, the Management Review Board (MRB) met to consider the proposed final Integrated Materials Performance Evaluation Program (IMPEP) report on the Utah Agreement State Program. Subsequent to the MRB meeting, the team requested additional time to review the updated Training Qualification Forms that were supplied to the team following the onsite review. Discussions were conducted with State management involving these forms and the report was further revised. MRB concurrence on the revised language was received on November 25, 2003. The MRB found the Utah program adequate to protect public health and safety, and compatible with the Nuclear Regulatory Commission's program.

Section 5.0, page 16, of the enclosed final report presents the IMPEP team's recommendation for the State of Utah. We received the August 14, 2003 letter from Craig W. Jones, Acting Director, Division of Radiation Control, and request no additional information at this time.

Based on the results of the current IMPEP review, the next full review will be in approximately four years.

I appreciate the courtesy and cooperation extended to the IMPEP team during the review. I also wish to acknowledge your continued support for the Radiation Control Program and the excellence in program administration demonstrated by your staff as reflected in the team's findings. I look forward to our agencies continuing to work cooperatively in the future.

Sincerely,

*/RA/*

Carl J. Paperiello  
Deputy Executive Director for Materials,  
Research and State Programs

Enclosure:  
As stated

cc: William J. Sinclair, Deputy Director  
Utah Department of Environmental Quality

Dane Finerfrock, Director  
Division of Radiation Control

Edgar Bailey, CA  
OAS Liaison to the MRB

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cc: William J. Sinclair, Deputy Director  
Utah Department of Environmental Quality

bcc: Chairman Diaz  
Commissioner McGaffigan  
Commissioner Merrifield

Dane Finerfrock, Director  
Division of Radiation Control

Edgar Bailey, CA  
OAS Liaison to the MRB

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INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM

REVIEW OF UTAH AGREEMENT STATE PROGRAM

June 23-27, 2003

# FINAL REPORT

U.S. Nuclear Regulatory Commission

## 1.0 INTRODUCTION

This report presents the results of the review of the Utah radiation control program. The review was conducted during the period June 23-27, 2003 by a review team comprised of technical staff members from the Nuclear Regulatory Commission (NRC) and the Agreement State of Maine. Review 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 a Final General Statement of Policy," published in the Federal Register on October 16, 1997, and the November 5, 1999, NRC Management Directive 5.6, "Integrated Materials Performance Evaluation Program (IMPEP)." Preliminary results of the review, which covered the period November 20, 1998, to June 27, 2003 were discussed with Utah management on June 27, 2003.

A draft of this report was issued to Utah for factual comment on July 24, 2003. The State responded by letter dated August 14, 2003. The Management Review Board (MRB) met on September 25, 2003 to consider the proposed final report. The MRB found the Utah radiation control program adequate to protect public health and safety and compatible with NRC's program.

The Utah Agreement State program is administered by the Division of Radiation Control (the Division) located in the Department of Environmental Quality (the Department). Organization charts for the Division and Department are included as Appendix B. The Utah program regulates approximately 200 specific licenses authorizing agreement materials and a low-level radioactive waste site. The review focused on the 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 Utah.

In preparation for the review, a questionnaire addressing the common and non-common performance indicators was sent to the Division on April 15, 2003. The Division provided a response to the questionnaire on June 2, 2003, and a corrected copy of the response was provided electronically on July 9, 2003, following the review. A copy of the corrected questionnaire response may be found on NRC's Agencywide Document Access and Management Systems using the Accession Number ML031910180.

The review team's general approach for conduct of this review consisted of: (1) examination of Utah's response to the questionnaire; (2) review of applicable Utah statutes and regulations; (3) analysis of quantitative information from the radiation control program licensing and inspection database; (4) technical review of selected licensing and inspection actions; (5) field accompaniments of three Utah inspectors; and (6) interviews with staff and management to answer questions or clarify issues. The review team evaluated the information that it gathered against the IMPEP criteria for each common and applicable non-common performance indicators and made a preliminary assessment of the Utah Agreement State program's performance.

Section 2 below discusses the State's actions in response to recommendations made following the previous IMPEP review and the team's conclusions regarding close-out of the recommendations. Results of the current review for the IMPEP common performance indicators are presented in Section 3. Section 4 discusses results of the applicable non-common performance indicators, and Section 5 summarizes the review team's findings and recommendations. Recommendations made by the review team are comments that relate

directly to program performance by the State. A response is requested from the State to all recommendations in the final report.

## 2.0 STATUS OF ITEMS IDENTIFIED IN PREVIOUS REVIEWS

During the previous IMPEP review, which concluded on November 20, 1998, one recommendation and one suggestion were made and transmitted to Dianne R. Nielson, Ph.D., Executive Director, Department of Environmental Quality, on February 9, 1999. The team determined that the State considered the suggestion and took appropriate action. The team's review of the current status of the recommendation is as follows:

1. The review team recommends that the State continue in their ongoing efforts to meet the reciprocity inspection frequencies outlined in NRC Inspection Manual Chapter (IMC) 1220.

Current status: The Division has implemented a system for tracking licensees working in the State under reciprocity. The Division has met or exceeded the reciprocity inspection frequencies for each year of the review period. This recommendation is closed.

## 3.0 COMMON PERFORMANCE INDICATORS

IMPEP identifies five common performance indicators to be used in reviewing both NRC Regional and Agreement State 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) Response to Incidents and Allegations.

### 3.1 Technical Staffing and Training

Issues 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 Division management and staff, reviewed job descriptions and training records, and considered any possible workload backlogs.

The Division consists of the Division Director, four administrative staff, including the Support Services Coordinator (SSC), and two technical Sections; the Radioactive Materials and X-Ray Section (the Materials Section), and the Waste and Environmental Section. The Radioactive Materials and X-Ray Section includes a Section Manager and eight full-time Health Physicist positions, four in the radioactive materials program and four in the X-Ray program. The Waste and Environmental Section consists of a Section Manager and eleven full-time positions in five program areas; Indoor Radon, Uranium Mills, Waste Isolation Pilot Project (WIPP) Transportation Project, Generator Site Access, and the Envirocare Low-Level Radioactive Waste site. Details of the Waste and Environmental Section staffing is discussed further under Section 4.3.1.

Technical staffing in the Materials Section has been stable since the previous review and the review team believes that this staffing level is adequate. One staff member from the materials program left the program on June 20, 2003. The review team was informed that the paperwork needed to fill this position had been initiated and approved at the Department level.

The Division has a documented training and qualification program in place for staff which is based on the NRC/Organization of Agreement States Joint Working Group report. Adequate qualification is determined through a combination of education and experience, formal classroom training, and on-the-job training. Staff members are required to have a bachelor's degree or equivalent experience in the physical sciences. The Division maintains a training matrix, listing the "required courses" and "recommended courses" for each staff position by program activity. These staff positions are: Health Physicist, Low-Level Waste Inspector, Radiological Transportation & Safety Specialist, Engineer, Hydrologist, and Section Manager.

Records show that Materials Section staff have all received their required and recommended courses for their positions, and are very familiar with Utah regulations, policies, and procedures.

During team interviews with the staff and the Division Radiation Safety Officer (RSO), the RSO discussed plans to conduct an in-house refresher course on some new survey equipment. The RSO agreed that the course should include refresher training for all technical staff on the capabilities and use of the other radiological instrumentation in the Division. This training will be documented in training files.

The Utah Radiation Control Board is appointed by the Governor, with consent of the Senate, and guides development of Radiation Control policy and regulations. The Board meets at least ten times per year, and the minutes of the meetings are posted on the web site. All members are subject to the Utah Public Officer's and Employees' Ethics Act.

Based on the IMPEP evaluation criteria, the review team recommended and the MRB agreed that Utah's performance with respect to the indicator, Technical Staffing and Training, was satisfactory.

### 3.2 Status of Materials Inspection Program

The team focused on five factors in reviewing this indicator: inspection frequency, overdue inspections, initial inspection of new licensees, the timely dispatch of inspection findings to licensees, and the performance of reciprocity inspections. The evaluation is based on the Division's questionnaire response relative to this indicator, data gathered independently from the Division's licensing and inspection data tracking system, the examination of completed licensing and inspection casework, and interviews with managers and staff.

The staff uses a custom database management system for their tracking system. The data is maintained on a network and is available to all staff. This allows them to project the next inspection due date and to sort the inspection data as needed. The staff updates the information on this system continuously to keep it up-to-date.

The team's review of the Division's inspection priorities verified that inspection intervals for various types of material licenses are generally at least as frequent as, or more frequent than, similar license types listed in NRC IMC 2800. Thirty-seven of the 78 license categories established by the Division are inspected more frequently than similar license types listed in NRC IMC 2800. Two categories, Instrument Calibration (< 100Ci) and Strontium-90 Eye Applicator, had inspection intervals greater than the interval outlined in NRC IMC 2800. However, the Division has no licensees in these categories.

In their response to the questionnaire, the Division indicated that no inspections were overdue by more than 25 percent of the NRC frequency. This information was verified by review of the inspection data provided to the team. The Division performs approximately 80 routine inspections annually. The team determined that only four core routine inspections were conducted overdue during the review period. The team also determined that, in those instances where the licensee was inspected past the due date, there was clear documentation that showed that an inspection was attempted by the due date or other extenuating circumstances existed. In all cases where inspections were conducted past the due date, Division management was fully aware of the circumstances.

With respect to initial inspections of new licensees, the review team noted that the Division conducted initial inspections in accordance with NRC IMC 2800 guidelines. There were 38 new licenses issued during the review period.

The timeliness of the issuance of inspection findings was evaluated during the inspection casework review. There were no instances identified where inspection correspondence was not sent within 30 days after the inspection. The team also determined that licensee responses were received and responded to in a timely manner.

During the review period, the Division granted 85 reciprocity permits, of which, 83 permits were core licensees based on NRC IMC 2800. The review team noted that the Division has adopted the criteria outlined in NRC IMC 1220 as the Division's criteria for inspecting licensees working in Utah under reciprocity each time the NRC has changed the criteria during the review period. The team also determined that the current NRC criteria of inspecting 20 percent of candidate core licensees operating under reciprocity each year is the criteria currently being used by the Division. The team determined that the Division met or exceeded the NRC IMC 1220 criteria for the entire review period.

The Division's custom database management system is programmed to provide the staff with a "pop-up" window, each day upon logging in, that indicates who is working in the State under reciprocity during the next 7-day period. If there are no licensees working under reciprocity during that time period, the "pop-up" window indicates this as well. The system also tracks who had been in the State, when, where, and for how long. The team recommends that the Division's system for tracking licensees that are working in the State under reciprocity be considered a good practice.

Based on the IMPEP evaluation criteria, the review team recommended and the MRB agreed that Utah's performance with respect to the indicator, Status of Materials Inspection Program, was satisfactory.

### 3.3 Technical Quality of Inspections

The team evaluated the inspection reports, enforcement documentation, inspection field notes, and interviewed staff for 10 radioactive material inspections conducted during the review period. The casework included all inspectors and the Materials Section Manager. The casework covered inspections of various types including; panoramic irradiator, medical institutions, medical private practice, industrial radiography, well logging, nuclear pharmacy, academic broad scope, academic/medical broad scope, portable gauge, and reciprocity. Appendix C lists the inspection casework files reviewed for completeness and adequacy with case-specific comments.



Utah's inspection procedures are consistent with NRC procedures. Inspections are routinely unannounced. The review team noted that, of the 10 inspections evaluated, only one was announced, this inspection was an initial inspection.

Based on casework, the review team noted that routine inspections covered all aspects of the licensees' radiation programs. The team noted that the inspections are both compliance oriented and performance-based. Field notes have been developed to cover all types of inspections that are conducted by the Division. These field notes provide documentation for the scope of the licensees' program and cover all areas that need to be reviewed. The information contained in the field notes is comparable with NRC's Inspection Procedure 87100. The inspectors also include various performance-based inspection techniques, such as direct observation of licensed activities, demonstrations, interviews, etc., when appropriate. Team inspections were performed when appropriate and for training purposes.

The inspection findings are issued under the signature of the Executive Secretary of the Utah Radiation Control Board, after a review of the inspection report by a peer and the approval by the Materials Section Manager. Inspection findings are routinely sent to the licensee well within 30 days. Licensee responses are reviewed and replied to in a timely manner. The inspection files were found to be complete and in good order.

The Materials Section Manager has accompanied all four of the inspectors, who conduct inspections of radioactive material licensees, at least annually since the last review.

During the week of May 5, 2003, a review team member performed accompaniments of two of the Materials Section's four inspectors on separate inspections of licensed facilities (see Appendix C). The inspections were of a nuclear pharmacy, a medical institution, and a portable gauge licensee. During the accompaniments, inspectors demonstrated appropriate inspection skills and knowledge of the regulations. The inspectors were well prepared and thorough in the review of licensee programs. The technical performance of both inspectors was excellent. The inspections were adequate to assess radiological health and safety at the licensed facilities.

The Division has available a variety of portable instruments for routine confirmatory surveys and use in incidents and emergency conditions. The instruments are calibrated annually, or as needed. The calibrations are done by the Division RSO, using a one curie cesium-137 source in a J. L. Shepherd calibrator and an electronic pulser for exposure rate instruments. Instruments used for contamination surveys are calibrated with a variety of alpha and beta sources.

Based on the IMPEP evaluation criteria, the review team recommended and the MRB agreed that Utah's performance with respect to the indicator, Technical Quality of Inspections, was satisfactory.

### 3.4 Technical Quality of Licensing Actions

The review team reviewed the response to the questionnaire, completed licensing casework and interviewed license reviewers for 27 specific licenses to assess this indicator. Licensing actions were evaluated for completeness, consistency, proper isotopes and quantities used, qualifications of authorized users, adequate facilities and equipment, and operating and emergency procedures sufficient to establish the basis for licensing actions. Licenses were evaluated for overall technical quality including accuracy, appropriateness of the license, its

conditions, and tie-down conditions. Casework was evaluated for timeliness, adherence to good health physics practices, reference to appropriate regulations, documentation of safety evaluation reports, product certifications or other supporting documentation, consideration of enforcement history on renewals, pre-licensing visits, peer or supervisory review as indicated, and proper signature authority. The files were checked for retention of necessary documents and supporting data.

The licensing actions reviewed included the following types of licenses: academic/medical broad scope; academic broad scope; pool irradiator; industrial radiography; large medical; small medical; research and development; manufacturing & distribution, brachytherapy/HDR, storage only, portable gauge; and fixed gauge. Licensing actions reviewed included two new licenses, nine amendments, four renewals, four terminations, two bankruptcies, and verified the status of six formerly terminated sites, which were handed over to the Division by the NRC in 2001. A list of these licenses with case-specific comments may be found in Appendix D.

The review team found that the SSC logs all licensing actions into the Division's radioactive materials database. The SSC then reviews the licensing action and distributes the action to the appropriate license reviewer, which is automatically assigned by the database.

The review team noted that the Division developed a new database with significant input by the Materials Section. This database allows the Division to efficiently assign and track all actions throughout the cycle of the license action.

The review team noted that each licensing action is thoroughly reviewed using a two phase process. A second qualified or senior reviewer reviews all actions before they are sent to the Materials Section Manager. The Materials Section Manager reviews all high priority actions before they are sent to the Executive Secretary of the Utah Radiation Control Board, or their designee, for issuance. In addition, complex cases are completed using a team of reviewers, including the Materials Section Manager, and often include frequent interactions with senior NRC reviewers. Furthermore, the Materials Section Manager reviews every tenth action and most complex actions. The Materials Section Manager's review includes the use of a checklist. The checklists generally follow the NUREG-1556 series, with the exception of the Volume 9, Medical Use of Byproduct Material.

The review team found that the licensing actions were thorough, complete, consistent, and of high quality, with health and safety issues properly addressed. Tie-down conditions are backed by information contained in the file, and are inspectable. Deficiency letters clearly state regulatory positions, are used at the proper time, and identify deficiencies in the licensees' documents. Terminated licensing actions are well documented, showing appropriate transfer and survey records. License files are complete and well organized. Applicable guidance documents are complete, well organized, available to reviewers, and appear to be followed.

Safety and security issues for all uses of radioactive material are being addressed throughout the licensing process and/or through the use of license conditions, particularly in the safety and security of portable gauges.

The review team noted that license reviewers also work as inspectors. The review team identified several occasions when the results of an inspection were used in an effective manner

to improve a license through either a licensing amendment or renewal. Similarly, license reviewers also mark items for follow-up during routine inspections of those licensees.

The review team found that in 2001, the NRC transferred six files to the Division for follow-up and eventual closure. The NRC terminated these sites before the State of Utah became an Agreement State. The Program accepted the challenge to assist the NRC in this extremely important project. The Division has dedicated sufficient time and resources to ensure the closure of the files, while continuing to protect radiological health and safety. The review team noted that these six files should be closed by the end of the year. The status of these may be found in Appendix D.

Based on the IMPEP evaluation criteria, the review team recommended and the MRB agreed that Utah's performance with respect to the indicator, Technical Quality of Licensing Actions, was satisfactory.

### 3.5 Response to Incidents and Allegations

In evaluating the effectiveness of the Division's actions in responding to incidents, the review team examined the Division's responses to the questionnaire relative to this indicator, reviewed the incident reports for Utah in the Nuclear Material Events Database (NMED) against those contained in the Division files, and evaluated reports and supporting documentation for 13 incidents. A list of the incident casework examined with case-specific comments is included in Appendix E. The review team also reviewed the Division's response to 18 allegations involving radioactive material and the low-level radioactive (LLRW) waste site, including 6 allegations referred to the Division by the NRC during the review period.

The incidents selected for review included the following categories: lost/stolen material, leaking sources, contamination, loss of control, and damaged equipment. The Division has excellent written guidance for handling of incidents in their "Administrative Policy" manual. When notification of an incident is received, the appropriate Section Manager and the staff discuss what level of initial response is appropriate. The review team found 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. The Division dispatched inspectors for on-site investigations when appropriate, and took suitable enforcement and follow-up actions.

The review team identified 14 reportable incidents in NMED for Utah during the review period. The Division reports incidents that require immediate notification to the NRC within 24 hours of notification, and incidents that require notification to the NRC within 30 days at the end of each month. It was noted that the Division closes events in NMED as required. Lost and stolen material (i.e., portable gauges) are also closed out in NMED even if they have not yet been found. This issue was discussed with Sam Petijohn, the NRC NMED contact, who related that this is an acceptable practice if all information available to the State has been reported to NMED, and that the State can always reopen the case if the device is found.

In evaluating the effectiveness of Utah's actions responding to allegations, the review team examined the Division's questionnaire responses relative to this indicator. The casework for six allegations (one radioactive materials allegation and five LLRW waste site allegations) referred

by the NRC was reviewed as well as the case work for an additional twelve materials allegations reported directly to the State.

After receiving an allegation, the Division evaluates each allegation and determines the proper level of response. The review of the casework files indicated that the Division took prompt and appropriate action in response to the concerns raised. All of the allegations reviewed were appropriately closed and appropriate parties were notified of the actions taken. There were no performance issues identified from the review of the casework documentation.

The Division has excellent written guidance for handling allegations in their "Administrative Policy" manual which was revised May 2003. However, from discussions and interviews with Section Managers and Division staff, it was apparent that one of the Section Managers and some of the technical staff are not thoroughly familiar with all of the elements of the Administrative Policy regarding allegations, and in particular the threshold of concerns to be reported as allegations. Initially, the review team made a recommendation involving providing additional training in the revised Administrative Policy regarding allegations to all Division managers and technical staff, and assuring that the policy is fully implemented. In the August 14, 2003 Letter from Craig W. Jones, Acting Director, Division of Radiation Control, response to the draft report, it was noted that special training involving allegations would be held on September 9, 2003. At the September 25, 2003 MRB meeting, the Division noted that this training had taken place, including reviewing the "threshold of concern" for allegations.

The review team noted that the Utah Code Annotated, "Government Records Access and Management Act (GRAMA)," requires that public documents be made available upon request with some exceptions. If the Division releases allegation records, the records can be redacted to protect the privacy of the allexer. The State makes every effort to protect an allexer's identity, but it cannot be guaranteed. During the initial contact, the allexer is advised that their anonymity cannot be guaranteed, particularly if the Division is compelled by court action to divulge the information.

Based on the IMPEP evaluation criteria, the review team recommended and the MRB agreed that Utah's performance with respect to the indicator, Response to Incidents and Allegations, was satisfactory.

#### 4.0 NON-COMMON PERFORMANCE INDICATORS

IMPEP identifies four non-common performance indicators to be used in reviewing Agreement State programs: (1) Legislation and Program Elements Required for Compatibility; (2) Sealed Source and Device Evaluation Program; (3) Low-Level Radioactive Waste Disposal Program; and (4) Uranium Recovery Program. Utah's Agreement currently does not include a uranium recovery program, and the Sealed Source and Device Evaluation Program was returned to NRC on June 1, 1996. Accordingly, the review team did not evaluate the second and fourth indicators.

##### 4.1 Legislation and Program Elements Required for Compatibility

###### 4.1.1 Legislation

In addition to their response to the questionnaire, the Division provided the review team with the opportunity to review copies of legislation that affect the radiation control program. The current

effective statutory authority is contained in the Utah Code Annotated, Title 19, Chapter 3, Radiation Control Act. The Division implements the radiation control program. A Radiation Control Board (the Board) is appointed by the Utah Governor and guides development of Radiation Control Policy and regulations in the State.

Statutory changes to the Radiation Control Act were made by the 2002 General Session of the Utah Legislature. In summary, the changes were made to implement an amended Agreement for uranium recovery regulation; added three members to the Board for a total of 13; expanded the authority for the Board to make rules; authorized the Board to establish fees for uranium mills and commercial waste facilities; and other administrative changes. The NRC reviewed the Utah application for an amendment to its Agreement for uranium milling and 11e.(2) byproduct material dated January 2, 2003, and provided comments dated June 27, 2003 (ML031810623).

#### 4.1.2 Program Elements Required for Compatibility

The State's regulations for control of radiation are located in Title R313 of the Utah Administrative Code, and apply to all ionizing radiation. Utah requires a license for possession and use of all radioactive material including naturally occurring materials, such as radium, and accelerator-produced radionuclides.

The review team examined the State's administrative rulemaking process and found that the process takes 120 days after filing a draft administrative rule. Draft administrative rules are sent to the Board for permission to get public comments and to file the proposed rule. The draft rules are published in the State Bulletin. After a public comment period, the rule is returned to the Board for final approval. The State 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 the Division's responses to the questionnaire, 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 Office of State and Tribal Program's (STP) State Regulation Status Data Sheet.

Current NRC policy requires that Agreement States adopt certain equivalent regulations or legally binding requirements no later than three years after they become effective. The review team found that the Program currently has no overdue NRC amendments.

The State will need to address the following three regulations in upcoming rulemakings or by adopting alternate legally binding requirements:

- "Requirements for Certain Generally Licensed Industrial Devices Containing Byproduct Material," 10 CFR Parts 30, 31, and 32 amendments (65 FR 79162) that became effective February 16, 2001.
- "Revision of the Skin Dose Limit," 10 CFR Part 20 amendment (67 FR 16298) that became effective April 5, 2002.
- "Medical Use of Byproduct Material," 10 CFR 20, 32, and 35 amendments (67 FR 20249) that became effective April 24, 2002.

Based on IMPEP evaluation criteria, the review team recommended and the MRB agreed that Utah's performance with respect to the indicator, Legislation and Program Elements Required for Compatibility, was satisfactory.

#### 4.2 Sealed Source and Device (SS&D) Evaluation Program

Effective June 1, 1996, NRC reassumed regulatory authority for sealed source and device evaluations in Utah, in response to a request from the State to relinquish that authority. No sealed source or device evaluations have been performed in Utah since that relinquishment. Accordingly, the review team did not evaluate this indicator.

#### 4.3 Low-Level Radioactive Waste Disposal Program

Envirocare of Utah, Inc., is a commercial shallow-land Low-Level Radioactive Waste (LLRW) disposal facility located 80 miles west of Salt Lake City in Tooele County. The State of Utah LLRW Disposal Program is administered by the Division. Regulatory authority is derived from the Radiation Control Act of Utah Code Title 19 Chapter 3, and the Radiation Control Rules promulgated in Utah Administrative Code, R313.

Envirocare is licensed by the Division under license number UT 2300249 which expires on October 22, 2003, and is currently in timely renewal. The license authorizes Envirocare to receive, store, possess, and dispose of naturally occurring radioactive materials (NORM) and LLRW less than Class A. In 1991, the license was amended to permit disposal of mixed waste, LLRW containing hazardous materials. Subsequently, the license was amended several times to receive, store, possess, and/or dispose of aqueous liquids and liquid mercury, Class A containerized waste, and special nuclear materials. The license was also amended to conduct waste treatment and processing at the site. Currently, in accordance with Utah Code Annotated 19-3-105, Envirocare may not receive Class B or Class C waste without first receiving approval of the Executive Secretary of the Utah Radiation Control Board, as well as approval from Utah Governor and the Legislature. Envirocare is required to maintain compliance with all conditions and schedules stipulated in the Utah Groundwater Discharge Permit, number UGW 450005, issued by the Executive Secretary of the Utah Water Quality Board.

The review of the LLRW disposal program was initiated through an early review of background materials and information relevant to the Division's LLRW program and related licensing activities. On May 20, 2003, three team members accompanied the Waste and Environmental Section (W&E Section) Manager and a W&E Section inspector during a one-day site visit to the Envirocare facility to discuss inspection activities, and examine facility operations and the overall site conditions. On June 25, 2003, a team member accompanied the Generator Site Access Specialist on an inspection of waste shipments and the manifest record evaluation.

The IMPEP assessment of the State's regulation and practices in administering the Envirocare facility was based upon the guidance found in NRC's Management Directive 5.6 for the LLRW disposal program non-common performance indicator. This indicator has five sub-indicators as follows: (1) Technical Staffing and Training; (2) Status of LLRW Disposal Inspection Program; (3) Technical Quality of Inspections; (4) Technical Quality of Licensing Actions; and (5) Response to Incidents and Allegations.

To evaluate the above sub-indicators, the team reviewed background materials on the site, participated in inspector accompaniments, reviewed the Utah response to the questionnaire, interviewed managers and staff, and reviewed records, as appropriate.

#### 4.3.1 Technical Staffing And Training

The evaluation of this indicator focused on: (1) qualifications of the technical staff and the expertise necessary to regulate a LLRW disposal facility; (2) the development and implementation of a training program for the staff; and (3) staffing trends that could have an adverse impact on the quality of the program.

The W&E Section consists of a Section Manager and eleven full-time positions in five program areas; Indoor Radon, Uranium Mills, Waste Isolation Pilot Project (WIPP) Transportation Project, Generator Site Access, and the Envirocare LLRW site. Staff members include engineers, hydrogeologists, health physicists, a transportation specialist, and a generator site access coordinator. The W&E Section is currently fully staffed, and there were only three turnovers since the last IMPEP (two retirements and one transfer). Five new professionals have been added to the W&E Section as follows: a Program Coordinator; a transportation specialist/inspector; a Hydrologist; a Health Physicist/Environmental Scientist; and an Engineer for the "Generator Site Access" program. The review team determined that there was a good balance of technical expertise in the program, and that staff turnover had no adverse impact on the program.

An assessment was performed of the staff's education and experience against the "NRC/OAS Training Working Group Recommendations for Agreement State Training" and "Suggested State Requirements and Criteria for a Low-Level Radioactive Waste Disposal Site Regulatory Program." The team examined individual W&E Section staff training documentation and conducted interviews with all available staff to assess qualification and training needs. The Division has a generic training plan that specifies required and recommended training for each technical position. Individual Training Qualification Forms are maintained for each person. The initial review of the individual Training Qualification Forms showed that the forms had not been maintained up to date.

Following the onsite review, the team requested and received copies of the updated Training Qualification Forms. The review team noted ambiguity between the position designations listed in the questionnaire, the positions listed above, the Training Qualification Forms, and the information posted on the Utah web site. The review team also noted that the qualifications of one LLRW inspector were unclear. Following the September 25, 2003 MRB meeting, the review team leader and the IMPEP project manager contacted Division management to discuss the ambiguity in the position designations and to clarify the LLRW inspector's qualifications. During the call, Division management noted the ambiguity between the position designations and confirmed that the LLRW inspector has sufficient experience to be qualified for his position. Based on the updated forms and Utah's further clarifications regarding qualifications of staff as compared with Utah's required training, the review team acknowledges that the W&E Section staff have completed their required training based on the job assignments being performed.

W&E Section staff interviews and the inspector (transportation specialist) accompaniment showed that the level of knowledge in the health physics and radiation protection areas needs improvement for selected staff. During the onsite review, the review team discussed the

specialized training planned for all technical staff in the area of health physics instrumentation (see Section 3.1), as well as, the possibility of utilizing professional organizations, such as the Health Physics Society, to help accommodate training needs. During the MRB meeting, the Division reported that weekly training sessions on radiation safety and instrumentation were being provided to the transportation specialist.

During the MRB meeting, the MRB directed that the recommendation to provide W&E Section staff recommended training, and update individual Training Qualification Forms be removed based on the State's reply that the staff had completed all required training and the forms had been updated.

Based on the IMPEP evaluation criteria, Utah's performance with respect to the sub-indicator, Technical Staffing and Training, was found satisfactory.

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

The Division has adopted NRC inspection guidance and procedures. The review team examined inspection files and conducted interviews with inspectors to determine that: (1) the LLRW disposal licensee is inspected at least annually, as prescribed in NRC IMC 2800; (2) any deviations from the prescribed inspection schedule are coordinated between working staff and management; and (3) inspection findings are communicated to licensees in a timely manner, as specified in NRC IMC 0610-10.

The Division conducted annual inspections at Envirocare from 1998 to 2001, and each annual inspection included all activities at the site. Due to the complexity of the review and timeliness of inspection needs, in 2001 the Division improved its inspection program by dividing LLRW site inspections into multiple modules. Modular inspections are performed throughout the year and may be varied to accommodate additional licensing activities. The modules include, but are not limited to, radiation safety, engineering, groundwater, and environmental monitoring. The review team verified that this modular inspection approach is complete and meets the minimum annual inspection frequency for a LLRW facility. In addition, the Division has conducted inspections of waste shipments at the Envirocare facility daily, or as needed.

Modular inspections, as compared to annual inspections, enable the Division to utilize the technical staff more efficiently, provide for more timely inspections, and provide better oversight of the waste facility operations and performance. The team commends the Division for adopting a modular approach for inspection of the Envirocare LLRW facility, and recommends to the MRB that this be considered as a good practice.

The mixed waste cell is inspected as part of the overall safety program and the radiological safety aspects of the cell have been evaluated as part of the routine inspections. The review team, the Division Director, and the W&E Section Manager discussed, and agreed to the development of an independent mixed waste module to address unique radiation safety issues at the mixed waste operations facility.

The review team determined that inspection findings were being communicated to the licensee within a 30-day period.



Based on IMPEP evaluation criteria, the review team recommended and the MRB agreed that Utah's performance with respect to the sub-indicator, Status of Low-Level Radioactive Waste Disposal Inspection Program, was satisfactory.

#### 4.3.3 Technical Quality of Inspections

The review team assessed the quality of LLRW disposal inspections by evaluating: (1) an accompaniment of a transportation specialist; (2) inspection field notes and completed reports (3) inspection procedures; (4) follow up on previous inspection findings; (5) appropriate and prompt regulatory actions; and (6) annual supervisory accompaniments.

The team determined from a review of the inspection files sampled, that inspections were complete, the findings well-founded, appropriately documented, and reviewed by supervisors. The procedures for modular inspections have been established and used to help identify root causes and poor licensee performance. The W&E Section Manager reviews the inspection findings and periodically issues enforcement letters, penalties, or a notice of violation, as necessary. The findings and observations are maintained in a detailed inspection log. Field notes reflect findings during ongoing operations. All open items from the previous inspection files were either closed out or scheduled for follow-up action during the next modular inspection. In addition, the State keeps a database regarding the Envirocare compliance history including violations. This database is a valuable tool for assessing and monitoring the LLRW disposal operations and performance. There were no performance issues identified in the inspections that were sampled.

Some of the inspection report documentation were missing or misplaced in the files. Division management believe that in some cases documents were lost or misplaced when copies were requested by a member of the public. In these cases, files were allowed to be copied at an outside location, not under the control of the Division. The team discussed the need to manage the control, access, and filing of the records to improve efficiency and eliminate potential losses due to mishandling of files. The team and Division management also discussed the need for an electronic filing system to enhance the maintenance of the record keeping system.

The transportation specialist for the "Generator Site Access" program was accompanied on June 25, 2003. During the accompaniment the specialist demonstrated appropriate inspection skills, knowledge of the regulations, and is regarded as an expert on U. S. Department of Transportation (DOT) regulations as related to waste transportation and manifest issues. However, the team noted that the specialist would benefit from additional training in health physics instrumentation as described in Section 3.1 and Section 4.3.1.

Supervisory accompaniments have been conducted only twice in 2002. The records did not show supervisory accompaniments for 1999, 2000, 2001, and 2003. Staff interviews also confirmed that supervisory accompaniments are rare. The team concluded that accompaniments of inspectors by their supervisors are rare and performed non-systematically. The review team recommends that LLRW inspectors receive annual supervisory accompaniments in a systematic fashion, and that accompaniments be appropriately documented.

Based on IMPEP evaluation criteria, the review team recommended and the MRB agreed that Utah's performance with respect to the sub-indicator, Technical Quality of Inspections, was satisfactory with recommendations for improvement.

#### 4.3.4 Technical Quality of Licensing Actions

Division staff have been engaged in several significant LLRW disposal licensing issues. Envirocare is continuously modifying and optimizing its operations to enhance safety aspects and to remain competitive. The Envirocare license has been amended 16 times since the previous IMPEP. The major licensing actions were reviewed, and were determined to be generally thorough, complete, consistent, and of acceptable technical quality. The license conditions are clear and inspectable, health and safety issues were properly addressed, and the licensing process appears to be thorough and consistent.

The Division has the ability to utilize independent analyses and public hearings in the license review process. The Division hired a technical consultant to address certain complex technical issues to verify the licensee's analysis for a licensing action on an open cell. A public hearing was also held. This demonstrates that the licensing process is fair, thorough, and consistent.

The team noted that the surface release limits in Table 27-A of the license were based upon Regulatory Guide 1.86 criteria, and are inconsistent with current DOT regulations. The Division has this issue under consideration and is evaluating the table for compatibility.

The team noted that the Division incorporated the Envirocare security plan into the license as a specific license condition, and makes the licensee more accountable for incoming/outgoing material at the site. The Division will be in a better position to monitor, inspect, and enforce safety and security aspects regarding release of contaminated tools, containers, or materials from the site. The team believes that this emphasis will enhance the site safety and security aspects. The review team recommends to the MRB that incorporation of the security plan on the license be considered a good practice.

The team noted that there are some delays in licensing actions that do not meet the licensee's schedule. Based on team interviews with the W&E Section Manager, Envirocare is planning for numerous processing amendments and new projects that will require a significant level of effort from W&E Section staff. The review team and Division management discussed the additional level of effort and resources necessary to cope with the increasing demands for licensing actions.

Based on IMPEP evaluation criteria, the review team recommended and the MRB agreed that Utah's performance with respect to the sub-indicator, Technical Quality of Licensing Actions, was satisfactory.

#### 4.3.5 Response to Incidents and Allegations

During the review period, the State received and addressed a total of eight allegations involving Envirocare LLRW activities, including allegations provided directly to the State and those referred to the Division by the NRC. The LLRW incidents and allegations were reviewed under the common indicator, Section 3.5. The review of the Division's allegation files indicates that the State took prompt and appropriate action in response to the concerns raised. The review team

noted that all documentation related to the investigation of allegations was appropriately maintained in a separate file, except for one file which was inadvertently placed among the inspection reports files, which are available to staff and potentially to the public. The improvement in record keeping was discussed under Section 4.3.3. The team also noted the lack of generic staff training on the threshold for treating licensee employee's concerns as allegations. The review team discussed the sensitivity of handling allegations with all of the Division managers. As discussed in Section 3.5, the Division updated their Incident and Allegation procedures in May of 2003, and the team recommended that all Division managers and technical staff receive training on the changes and implementation of this revised procedure. As noted in Section 3.5, special training involving allegations was held on September 9, 2003.

Based on IMPEP evaluation criteria, the review team recommended and the MRB agreed that Utah's performance with respect to the sub-indicator, Response to Incidents and Allegations, was satisfactory.

#### 4.3.6 Summary

The review team recommends a finding of satisfactory for four sub-indicators and satisfactory with recommendations for improvement for the sub-indicator, Technical Quality of Inspections. The team notes that a recommendation for improvement was made involving inspector accompaniments, and that good practices were identified in two performance areas. Therefore, based on IMPEP evaluation criteria, the review team recommended and the MRB agreed that Utah's overall performance with respect to the indicator, Low-Level Radioactive Waste Disposal Program, was satisfactory.

### 5.0 SUMMARY

As noted in Sections 3 and 4 above, the review team and the MRB found Utah's performance to be satisfactory for all performance indicators. Accordingly, the review team recommended and the MRB concurred in finding the Utah Agreement State program adequate to protect public health and safety and compatible with NRC's program. Based on the results of the current IMPEP review, it was agreed that the next full review should be in approximately four years.

Below is a recommendation, for implementation and evaluation, as appropriate, by the State.

#### RECOMMENDATION:

The review team recommends that LLRW inspectors receive annual supervisory accompaniments in a systematic fashion, and that accompaniments be appropriately documented. (Section 4.3.3)

#### GOOD PRACTICES:

1. The Division's custom database management system is programed to provide the staff with a "pop-up" window, each day upon logging in, that indicates who is working in the State under reciprocity during the next 7-day period. If there are no licensees working under reciprocity during that time period, the "pop-up" window indicates this as well. The system also tracks who had been in the State, when, where, and for how long. The team

recommends that the Division's system for tracking licensees that are working in the State under reciprocity be considered a good practice. (Section 3.2)

2. Modular inspections, as compared to annual inspections, enable the Division to utilize the technical staff more efficiently, provide for more timely inspections, and provide better oversight of the waste facility operations and performance. The team commends the Division for adopting a modular approach for inspection of the Envirocare LLRW facility, and recommends to the MRB that this be considered as a good practice. (Section 4.3.2)
3. The team noted that the Division incorporated the Envirocare security plan into the license as a specific license condition, and makes the licensee more accountable for incoming/outgoing material at the site. The Division will be in a better position to monitor, inspect, and enforce safety and security aspects regarding release of contaminated tools, containers, or materials from the site. The team believes that this emphasis will enhance the site safety and security aspects. The review team recommends to the MRB that incorporation of the security plan on the license be considered a good practice. (Section 4.3.4)

## **LIST OF APPENDICES AND ATTACHMENTS**

Appendix A	IMPEP Review Team Members
Appendix B	Utah Organization Charts
Appendix C	Inspection Casework Reviews
Appendix D	License Casework Reviews
Appendix E	Incident Casework Reviews
Attachment	August 14, 2003 Letter from Craig W. Jones, Acting Director, Division of Radiation Control

## APPENDIX A

### IMPEP REVIEW TEAM MEMBERS

Name	Area of Responsibility
Richard Woodruff, Region II	Team Leader Technical Staffing and Training
Linda McLean, Region IV	Response to Incidents and Allegations Legislation and Program Elements Required for Compatibility
Michael Fuller, Region IV	Status of Materials Inspection Program Technical Quality of Inspections Inspector Accompaniments
Shawn Seeley, Maine	Technical Quality of Licensing Actions
Boby Abu-Eid, NMSS/DWM Susanne Woods, NMSS/DWM	Low-Level Radioactive Waste Disposal Program

APPENDIX B

STATE OF UTAH

DEPARTMENT OF ENVIRONMENTAL QUALITY  
and  
DIVISION OF RADIATION CONTROL

ORGANIZATION CHARTS  
**ML032050445**

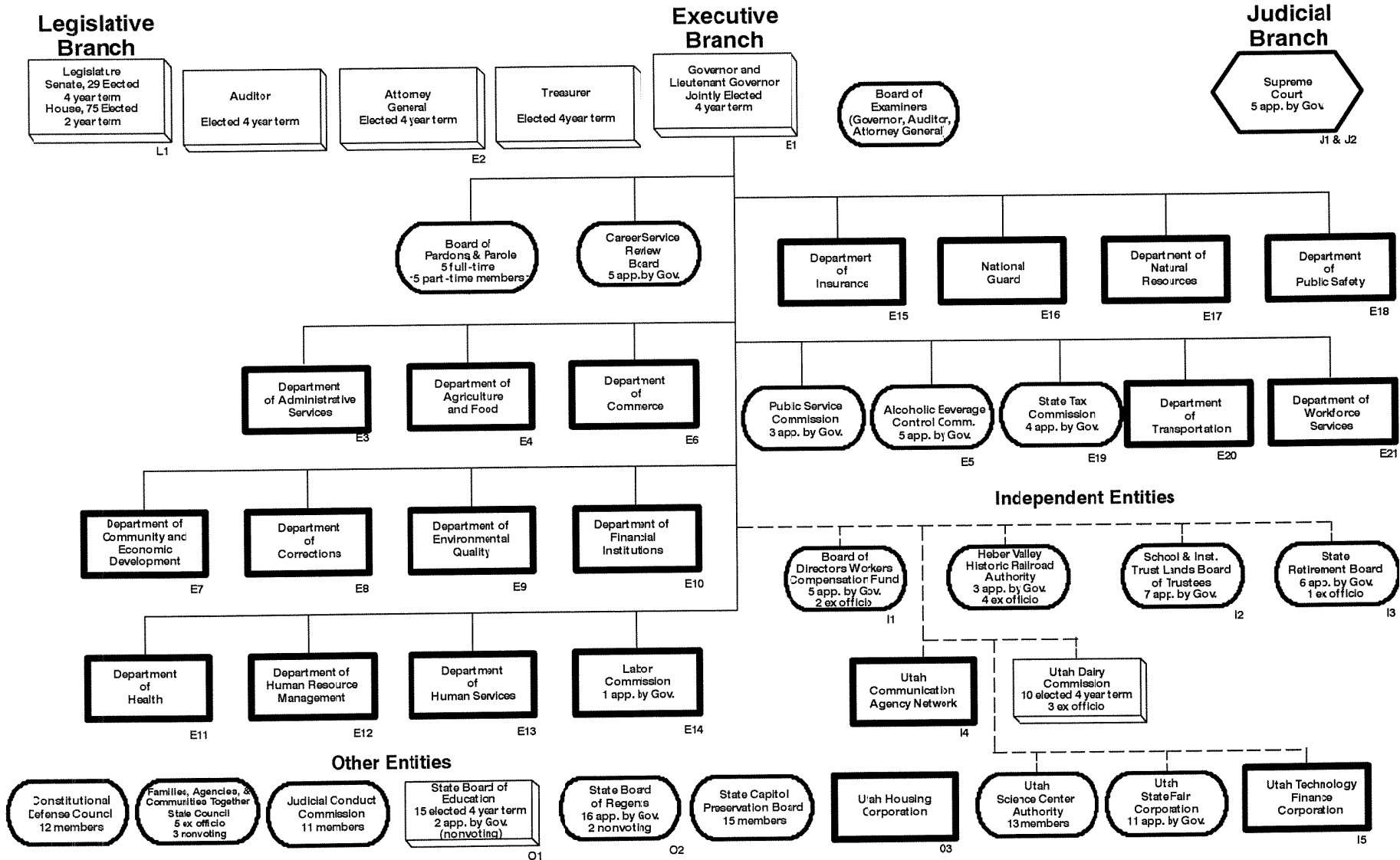
Governor: Michael O. Leavitt  
 Lt. Governor: Olene S. Walker

Summary Chart

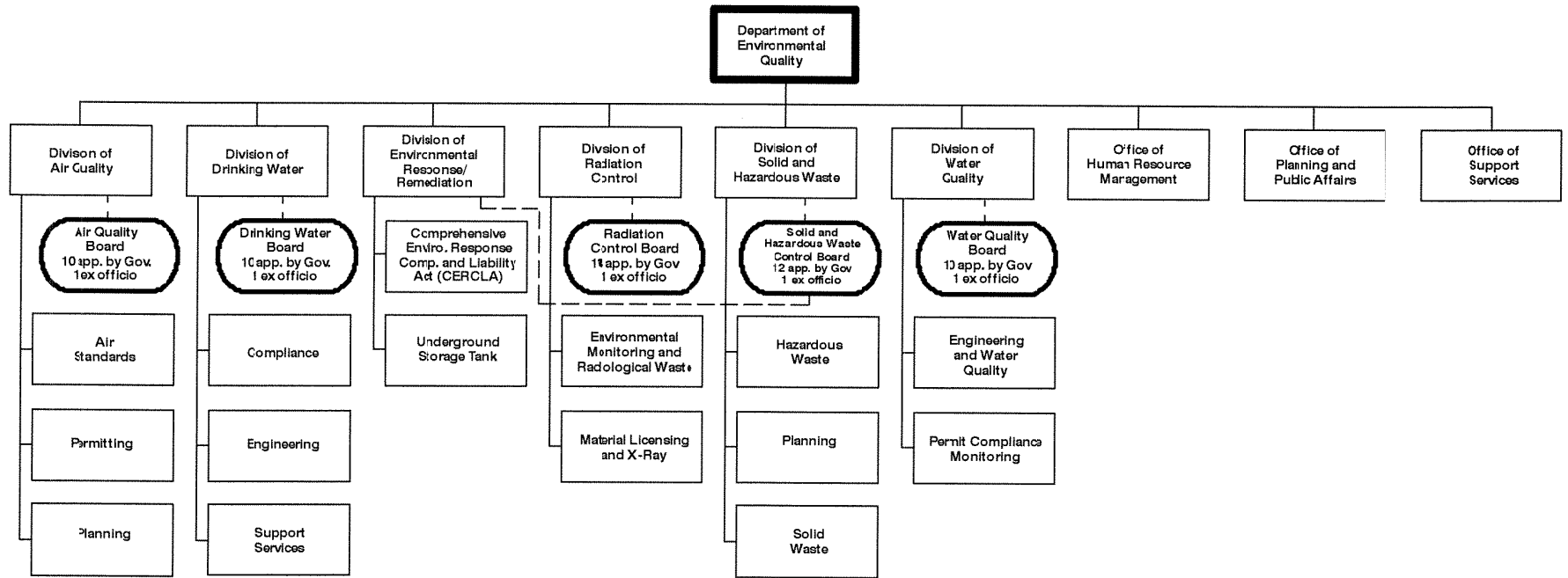
UTAH STATE GOVERNMENT

Prepared by  
 OFFICE OF LEGISLATIVE RESEARCH AND GENERAL COUNSEL  
 July 2002

Population 2,295,971 (estimated July 2001); Counties 29; Municipalities 237; Independent Special Districts approximately 325; School Districts 40







**ATTACHMENT**

August 14, 2003 Letter from Craig W. Jones  
Utah's Response to Draft IMPEP Report

**ML032300319**



# Utah!

Where ideas connect

Department of Environmental Quality  
Division of Radiation Control

Michael O. Leavitt  
Governor

Dianne R. Nielson, Ph.D.  
Executive Director

William J. Sinclair  
Executive Secretary  
Radiation Control Board

Craig W. Jones  
Acting Director

168 North 1950 West  
P.O. Box 144850  
Salt Lake City, Utah 84114-4850  
(801) 536-4250  
(801) 533-4097 Fax  
(801) 536-4414 T.D.D.  
www.deq.utah.gov

August 14, 2003

Richard L. Woodruff  
Regional Agreement State Officer  
U.S. Nuclear Regulatory Commission  
Region II  
61 Forsyth Street SW Suite 23T85  
Atlanta, Georgia 30303-8931

Dear Mr. Woodruff:

This correspondence is in response to the Integrated Materials Performance Evaluation Program (IMPEP) Draft Report that documents the results of our review held June 22-27, 2003. The Division of Radiation Control Staff has reviewed the draft report and provides the following corrections for your consideration:

- Page 5, paragraph 3, first sentence: Reference is made to the "Division Director." This should be changed to "Executive Secretary of the Utah Radiation Control Board."
- Page 6, paragraph 5, line 4: "Director" should be changed to "Secretary."
- Page 8, paragraph 3: In the first line, it is recommended that "Department's Statute" be changed to "Utah Code Annotated." For the second sentence, we suggest that it be changed to, "If the Division releases allegation records, they can be redacted to protect the privacy of the alleged." At the end of the third sentence, please add "particularly if the Division is compelled by court action to divulge the information."
- Page 8, paragraph 6, line 4: Delete "Title R313, Environmental Quality, Radiation Control" and replace with "Radiation Control Act."
- Page 9, paragraph 2, first sentence: Delete "Title 19, Chapter 3," and replace "Utah Code" with "Utah Administrative Code."
- Page 10, paragraph 2, line 2: Change "Toole" to "Tooole."
- Page 10, paragraph 3, line 6: Delete "naturally occurring and accelerator produced material (NARM)."
- Page 11, paragraph 3, starting with the fourth sentence we have reprinted the text. Additions are shown with an underline and deletions are bracketed and interlined. "A review of this plan shows that required training was provided to [some] all staff. However, several of the W&E Section staff have not completed the recommended training for their positions. In particular, those hired after the last IMPEP review have not completed [~~the required and~~] all of the recommended training. [~~the health physics and radiation protection areas.~~] W&E Section staff interviews and the inspector (transportation specialist) accompaniment also showed that the level of knowledge in [~~these areas~~] the health physics and radiation protection areas needs improvement for selected staff. A review of the individual Qualification Forms shows that the forms have not been

maintained up to date. However, the affected forms were updated during the review and current forms were made available for review. The review team discussed specialized training planned for all technical staff in the area of health physics instrumentation (see Section 3.1), and in addition, the possibility of utilizing professional organizations information resources, such as the Health Physics Society, to help accommodate training needs. The review team recommends that W&E Section staff be provided the recommended training listed in the training plan, and that individual Qualification Forms continue to be updated, as appropriate."

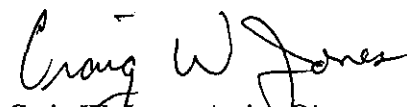
- Page 12, paragraph 4, last sentence: Before this statement, insert "The radiological safety aspects associated with the mixed waste cell have been evaluated as part of routine inspections. However, the Management.... After "module" please add, "to address unique radiation safety issues at the mixed waste operations facility."
- Appendix C, Inspector Accompaniments, Accompaniment No.: 4: Please add "/Generator Site Access" after "Waste Disposal."
- Appendix D, License Casework Reviews, File No.: 4: Please change "exceeds" to "is less than" in the comment. A copy of the affected page from the license and page 1 of the Sealed Source and Device Registry Sheet are enclosed.

We appreciated the thoroughness and open nature of the IMPEP review. The various discussions between Division staff and IMPEP team members resulted in a mutual exchange of useful information. The performance-based nature of this review was also evident. We understand the recommendations as stated in the report. For discussion purposes, the following is offered regarding the recommendations:

- The review team recommends that additional training in the revised Administrative Policy regarding allegations be provided to all Division managers and technical staff, and to assure the policy is fully implemented. Please be advised that a staff training session has been scheduled for September 9, 2003. It will be noted, during the training, that the policy is fully implemented.
- The review team recommends that W&E Section staff be provided the training listed in the training plan, and that individual Qualification Forms be updated, as appropriate. As noted in our proposed revision to Section 4.3.1, the W&E Section staff has all received the required training that was outlined in the training plan, but some of the staff has not yet received the recommended training. The affected Qualification Forms have all been updated and this occurred while the IMPEP review team was on-site.

Thank you for the opportunity to respond to the draft report. If you have questions regarding any of the changes we have suggested, please contact me at (801) 536-4264.

Sincerely,



Craig W. Jones, Acting Director  
Division of Radiation Control

Enclosure: As stated

cc: Dianne R. Nielson, Executive Director, DEQ