FINAL APPLICATION
VOLUME 1
AMENDED AGREEMENT FOR URANIUM RECOVERY REGULATION

STATE OF UTAH

DIVISION OF RADIATION CONTROL
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

JANUARY 2003

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UTAH FINAL APPLICATION
FOR
URANIUM MILLS AND MILL TAILINGS

Introduction (Criterion 29*)

Section 274 of the Atomic Energy Act of 1954, as amended, authorizes the U.S. Nuclear Regulatory Commission (NRC) to enter into agreements, whereby states assume certain regulatory functions that would otherwise be the responsibility of the NRC. Utah Code Annotated (UCA) 19-3-113 authorizes the Governor of Utah to enter into such an agreement. On April 1, 1984, Utah became an Agreement State with regulatory authority over 11e.(1) byproduct material, source material, and special nuclear material in quantities not sufficient to form a critical mass. On May 9, 1990, the agreement was amended to include the regulatory authority for land disposal within the State of source, byproduct, and special nuclear material received from other persons. At this time, the State of Utah wishes to amend its agreement to assume regulatory authority over byproduct material as defined in Section 11.e.(2) of the Atomic Energy Act for uranium mills and mill tailings.

The Utah Department of Environmental Quality (DEQ), Division of Radiation Control (DRC), will be the designated agency for carrying out these responsibilities. William J. Sinclair, Director of the Division of Radiation Control, will be the contact.

*1981/1983 Policy Statement "Criteria for Guidance of States and NRC in Discontinuance of NRC Regulatory Authority and Assumption Thereof by States Through Agreement"

Policy Statement (Criteria 29 and 35)

The following policy statement for assuming regulatory authority over byproduct material as defined in Section 11.e.(2) of the Atomic Energy Act for uranium mills and mill tailings has evolved through a discussion process involving scoping and task force meetings. During October and November 1999, the Division of Radiation Control conducted a series of stakeholder meetings with potential licensees and a series of public scoping meetings that were held in Salt Lake City, Tooele, Ticaboo, Blanding, and Moab, Utah. At the public scoping meetings, the Division requested comments on the following proposal: "The State of Utah will amend its current agreement with the Nuclear Regulatory Commission to regulate uranium mills and tailings." Thirty-nine persons offered oral comments during the public scoping meetings and approximately 150 persons attended the five scoping meetings. In addition, 8 written comments were received during a public comment period that ran from October 28, 1999 through December 6, 1999.

During the 2000 Utah legislative session, it was determined that it would be beneficial to form an Agreement State/Groundwater Authority task force to examine several issues relating to Agreement State status. The task force was initiated by the Utah Department of Environmental Quality in April 2000. Interested stakeholders that were invited to participate on the task force included licensee representatives, local community representatives, representatives of the Utah Radiation and Water Quality Boards, and a representative of the Utah Mining Association. The task force was jointly sponsored by the Department of Environmental Quality, Divisions of Water Quality and Radiation Control. After several meetings, the task force formulated a paper entitled: "Elements of a Utah Agreement State Program for Uranium Mill Regulation." In July

2000, the task force unanimously supported the Division of Radiation Control in pursuing Agreement State status as established in the "Elements" paper. The "Elements" paper described several aspects of a Utah Agreement State program including the following policy statement:

"The State of Utah recognizes the importance of and supports the uranium mining and milling industry. The State recognizes that to remain viable at this time, uranium mills must be able to engage in activities other than milling conventional mined uranium ores such as processing alternate feed materials for the recovery of uranium alone or together with other minerals. The State also recognizes its responsibility to ensure that all such activities are accomplished in a manner that is protective of human health and the environment. It has been a long-standing policy for the State to seek primacy for environmental programs. In this regard, the State believes that a cooperative uranium mills and tailings regulatory program will be of benefit to both the regulated community and Utah citizens. The advantages that the State can offer over the current Nuclear Regulatory Commission program include better communication with and participation of the public in uranium recovery issues, elimination of duplicative regulatory responsibilities, providing a more cost effective program for the regulated community, and establishing control of materials not currently being regulated (e.g. pre-1978 uranium mill tailings) while maintaining a regulatory program that is adequate and compatible with existing and future NRC regulations and policy. The elements within this application provide the framework for how the State of Utah would regulate uranium mills and tailings as an Agreement State."

Information on the task force, including minutes of each meeting can be found on the Division of Radiation Control website at http://www.deq.state.ut.us/EQRAD/MILLS/ATLAS/Deq_task.htm. Announcement of formation of the task force as well as periodic updates of the task force work were provided to the Utah Radiation Control Board.

The State of Utah also wishes to emphasize that this application does not include the former Atlas site in Moab, Utah, now known as the Moab Millsite. In accordance with the Defense Reauthorization Act, this property was transferred to the Department of Energy. The Moab Millsite has converted back to a Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I site with cleanup responsibility delegated to the Department of Energy.

Description of Organization (Criteria: 29, 33, and 35)

[See Appendix A for Organizational Charts]

The Department of Environmental Quality was created within state government on July 1, 1991 with the mission of safeguarding human health and quality of life through the protection and enhancement of the environment. The Governor with the advice and consent of the Senate appoints an Executive Director to administer the Department. The Department is made of six divisions: Division of Air Quality, Division of Drinking Water, Division of Environmental Response and Remediation (Superfund, Underground Storage Tanks, and Emergency Response), Division of Radiation Control, Division of Solid and Hazardous Waste, and the Division of Water Quality. Each Division is under immediate direction and control of a Division Director appointed by the Executive Director. There are five policymaking boards created within the department: the Air Quality Board, Radiation Control Board, the Drinking Water Board, the

Water Quality Board, and the Solid and Hazardous Waste Control Board. Division Directors are also appointed as an Executive Secretary to the appropriate Board.

The Utah Division of Radiation Control promotes a mission that protects Utah citizens and the environment from sources of radiation that constitute a significant health hazard. The Division is divided into two sections, Radioactive Materials and X-ray Section and Low-Level Waste and Environmental Monitoring Section. The Sections are supervised by two managers who are under the direction of the Division Director. Upon assumption of the program, the Low-Level Waste and Environmental Monitoring Section will be renamed the Environmental Monitoring, Uranium Recovery, and Waste Management Section. The staff is divided among the following: Radioactive Materials, X-ray, Indoor Radon, Envirocare, Waste Isolation Pilot Plant Transportation Project, and the Generator Site Access permit program. A seventh program, Uranium Mills, will be added. Division staff carry out the Division's mission and assist customers in complying with the rules.

The Radioactive Material and X-ray Section is responsible for coordinating and managing the use of radiation sources in hospital, clinical, medical, research, academic, and industrial facilities. This section performs the regulatory functions of licensing and inspecting facilities using radioactive material; registering and inspecting medical, academic, research, and industrial radiation producing equipment; and responding to radiation incidents.

The Low-Level Waste and Environmental Monitoring Section is responsible for licensing and inspecting the Envirocare low level waste facility; studying indoor radon concentrations and

disseminating information to the public relevant to health risks; directing and overseeing on-site stabilization or relocation of abandonment of uranium mill tailings; and maintaining the integrity and usefulness of radiation survey instruments.

The Radiation Control Board is appointed by the Governor with the consent of the Utah Senate and guides development of state radiation control policy and rules in the state. The board is made up of 13 members, one of whom is the Department of Environmental Quality Executive Director or designee, and are appointed by the Governor with the advice and consent of the Senate. The Department and Division staff submit recommendations for Board members to the Governor for consideration. The appointed members are to be knowledgeable about radiation protection and represent the following interests in the community: a physician; a dentist; a health physicist or other professional employed in the field of radiation safety; three representatives of the regulated community, at least one whom represents the radioactive waste management industry and one who represents the uranium milling industry; a registrant or licensee representative from academia; one representative of a local health department; one elected county official; and three members of the general public, at least one of whom represents organized environmental interests. The board is required to meet at least quarterly to carry out the duties described in section 19-3-103.5 of the Utah Code Annotated. The Board typically meets on a monthly basis except February and July. The Board also travels, as resources allow, to southeastern Utah and Tooele County for one of the monthly meetings during the year. It may be necessary to consider an increase in the number of times that the Board meets in southeastern Utah as a result of uranium recovery regulation. Board members are subject to the Utah Public Officers' and

Employees' Ethics Act. Information regarding disclosure and conflict of interest for Board members are found in Appendix A.

The State of Utah rules were amended to include an environmental report prepared by the licensee that will be reviewed by the Division of Radiation Control.

Outside consultants will not be used but the Division has the ability to contract with outside consultants through its fee schedule with mutual consent of the licensee.

The medical consultant with expertise in emergency medicine that would be used by the Division is the Radiation Emergency Assistance Center/Training Site in Oak Ridge, Tennessee. The Department of Energy Idaho National Engineering and Environmental Laboratory would also be used as a resource.

Legal support is through the Attorney General's Office. The Utah Attorney General's Office provides legal consultation services on all environmental issues that the Division may need to address. The Attorney General's office can provide criminal investigative assistance and prosecution.

Groundwater Authority (Criteria 29, 33, and 35)

The Division of Radiation Control administers both groundwater permitting and radioactive material licensing for disposal facilities and uranium mills. This process has been made more effective by utilizing existing provisions of the Utah Water Quality Act which allows the Water

Quality Board and Executive Director to designate the Director of the Division of Radiation Control as a Co-Executive Secretary to administer provisions of the Water Quality Act for the identified facilities [see Utah Code Annotated (UCA) 19-5-106 and 19-5-104 (1),(k)]. The DRC Director has been designated as a Co-Executive Secretary of the Water Quality Board and given legal authority to issue, administer, and enforce specific groundwater permits under the Utah Water Quality Rule UCA R317-6 as applied to the following facilities: Envirocare, Rio Algom, International Uranium Corporation, and Plateau Resources Limited, and as allowed under the provisions of UCA 19-5-104(1)(k). No separate involvement of the Division of Water Quality staff is required although they are available to consult with the DRC Director regarding interpretation of rules and other technical or procedural matters relating to groundwater protection. Appeals of enforcement proceedings and permit issues relating to groundwater would be through the Utah Water Quality Board. The Division has substituted the Administrative Rules for Ground Water Quality Protection, R317-6 for groundwater standards provided in Appendix A, 10 CFR Part 40 (EPA Rules 40 CFR Part 192). Enclosed in Appendix G is a packet of information previously submitted including:

(1) A cover letter of October 23, 2002 requesting review of information to justify an "alternate standard" under the Uranium Mill Tailings Radiation Control Act (UMTRCA);

(2) Summary of the process used to determine how to best regulate groundwater at Utah uranium mill facilities;

(3) Executive Summary - Comparison of NRC Groundwater Protection Criteria in 10 CFR Part 40, Appendix A with Utah Ground Water Quality Protection Rules (UAC R313-6)

(4) Detailed Comparison of NRC Groundwater Protection Criteria in 10 CFR Part 40, Appendix A with Utah Ground Water Quality Protection Rules (UAC R313-6)

Staffing (Criteria 29, 34, and 35)

(See also Appendix B)

Up to three new positions will be created within the Division for the Uranium Mill Program that will be combined with an existing groundwater hydrologist position within the Division that already coordinates the uranium mill issues. Eventually, this groundwater hydrogeologist will be responsible for the inspection and licensing of groundwater monitoring for the Uranium Mill Program. A health physicist will be responsible for radiation safety license reviews and inspections of mills as well as inspection of all radioactive material licensees in southern Utah (some 28 licensees). An engineer will be responsible for the inspection and licensing of new facilities, upgrading existing facilities, and closing facilities. An Office Technician II will be responsible for administrative support for the program. Staff currently utilized for licensing and oversight of Envirocare will also assist with the regulation of the Uranium Mill Program.

Management of the Uranium Mill Program will be under the direction of the Low-Level Waste and Environmental Monitoring Section Manager. The 28 radioactive material licensees that the health physicist inspects will be under the direction of the Radioactive Material and X-ray Section Manager.

The Division will staff the program by submitting a request, once it is known when the amended Agreement is to be signed, to the Department of Environmental Quality Human Resource

Management Office to recruit the three positions. The positions have already been authorized and established in the Department FY 2003/2004 budgets. It is anticipated that recruitment may commence as early as July 1, 2003 depending on the status of the amended Agreement. This would be in anticipation of an amended Agreement being signed on or before October 1, 2003. Three months of fees collected during January - March 2002 will fund new staff and have them in place prior to signing of the amended Agreement. The new staff will be mentored by existing staff that have been qualified in key areas prior to the new staff being hired. By July 1, 2003, the following existing Division of Radiation Control staff will be qualified in the uranium mill program area:

Specialty Area	Staff Members to be Qualified
Health physics	Gwyn Galloway, John Hultquist, Boyd Imai
Engineering	Steve Palmer, Woody Campbell
Groundwater	Loren Morton, Rob Herbert, Brian Hamos

The qualification process will consist of completion of NRC "core" courses (many of the above staff have accomplished this) in each specialty areas. Training will also be provided through accompaniment of NRC inspectors from NRC Region IV during routine mill inspections of the International Uranium White Mesa Mill, the Rio Algom facility, and the Plateau Resources Shootaring Canyon Mill. Opportunity will also be taken for inspection training during Region IV inspection of the Envirocare facility 11e.(2) operations. In addition, arrangements have been made with the Colorado Department of Public Health and Environment Radiation Services Division to accompany state of Colorado inspectors on a training/tour/routine inspection of the Cotter Corporation Mill in Canon City, Colorado. As the above staff members are qualified as

mentors, they will be available to work with newly hired staff prior to the signed amended Agreement to the point in which newly hired staff achieve uranium mill competency. Once newly hired staff are competent to work independently, the mentors provide adequate backup in this specialty area as needed.

The new staff will also go through program orientation and receive the opportunity to participate in Nuclear Regulatory Commission or equivalent, State, Federal Emergency Management Agency, Department of Energy, and other job related courses. The engineer, health physicist, and hydrogeologist will have the opportunity to take the following NRC or equivalent courses as needed: Inspection Procedures, Introduction to Licensing Practices and Procedures, Introduction to Health Physics, Nuclear Transportation Course, Radiation Protection Engineering, Radiological Emergency Response Operations Training, and available courses related to uranium mill and mill tailings. They will also review the Radiation Control Rules and become familiar with Regulatory Guides and reference materials. The NRC Training guidance documents (NRC Inspection Manual Reports 1246A-12 and A-13, Section XIII: "Training Requirements for Uranium Recovery Project Manager/ Technical Reviewer" and Section XII "Uranium Recovery Inspector NRC Inspector Qualification Journal") will be utilized by the Division as references for training inspectors and license reviewers for uranium mills. The office technician will be given the opportunity to take State training programs as they become available.

In order to ensure that an adequate number of staff were to be hired to fulfill the requirements of the uranium mill and tailings regulatory program, an evaluation was conducted. As mentioned previously, the staff to be hired are 1 health physicist, 1 engineer, and 1 office technician. The

groundwater hydrologist position that was anticipated will be filled by an existing position who has been coordinating uranium mill issues for the Division. It was determined that the professional staff (engineer, health physicist, groundwater hydrologist) would be available for 260 work days (52 weeks/year X 5 days/week). Factors of vacation (10 days assumed), paid holidays (11 days), and sick leave used (5 days) reduced the availability of 1 staff person to 243 days per year. Professional staff consisting of three persons would provide the Division with the availability of 702 staff days. Office technician administrative functions were not factored into the available staff days. This includes such administrative functions as filing, correspondence, GRAMA (similar to FOIA) requests, equipment and supplies, and travel arrangements.

To evaluate the staff availability, inspection and licensing activities were estimated on a yearly basis.

INSPECTION WORKLOAD/YEAR

Average Inspections per year	# of staff involved	Staff days per inspection	Enforcement factor [1]	Inspection days per year [2]
Envirocare - 2	3	5	10	50
Rio Algom - 2	2	3	0	12
IUC - 2	3	5	5	40
Plateau - 2	2	3	0	12
Totals				114 days

[1] Enforcement factor may include Notice of Violation/Order preparation, evaluation of responses regarding corrective actions, final settlement or administrative hearing.

[2] Does not include travel time to and from Southeastern Utah estimated to be 6 hours/each way. Rio Algom and White Mesa trips to be combined, Plateau trips will be single trip.

LICENSING WORKLOAD/YEAR

Licensee	Significant licensing actions/year	Public participation factor [1]	# of staff involved	Staff days per action	Licensing staff days
Envirocare	4	48	3	10	168
Rio Algom	1	12	2	5	72
IUC	4	48	3	10	168
Plateau	1	12	2	5	72
Totals					480 days

[1] Public participation factor: public hearing (1 day), evaluate comments (5 days), final decision (2 days), administrative hearings (4 days) = 12 days

To determine staff availability for a year, the inspection days workload (114 days) was added to the licensing days workload (480 days) for a total of 594 days. A 15% contingency factor (89 days) was also included which would include training and other non-direct activities.

In conclusion, staffing appears adequate:

> 594 days (inspection/licensing workload) + 89 days (15 % contingency) = 683 days
> 702 staff availability days estimated = + 19 staff availability days (not including the administrative services provided by the office technician)

Funding (Criteria 29 and 35)

The DRC will use a combination of annual operating fees and hourly review fees. The operating fees were initially established in the Radiation Control Act as a result of the passage of 1 substitute SB96 during the 2002 General Session of the Utah Legislature. The fees, beginning in FY2004 will be established and transferred to the DEQ annual fees document. A copy of the FY2004 proposed fee schedule is included in Appendix H. This fee schedule will be offered for approval during the 2003 General Session of the Utah Legislature. An hourly review fee was established in the DEQ annual fees document during the 2002 legislative session that will be effective upon program transfer. Annual operating fees will differentiate between closed,

standby, and operating facilities. Review of NRC generated data regarding review fees and operating fees suggested that there will be sufficient revenue generated to fully fund the state program.

Statutory Changes (Criteria 29 and 35)
(See also Appendix C)

The Radiation Control Act was amended during the 2002 General Session of the Utah Legislature by 1 substitute Senate Bill 96 (enrolled copy provided in Appendix I) to allow the Radiation Control Board to establish rules for licensing, operation, decontamination, decommissioning, including financial assurance, and reclamation of sites, structures, and equipment used in conjunction with possession, use, transfer, or delivery of source and byproduct material and the disposal of byproduct material (uranium or thorium mill tailings and related wastes). The Radiation Control Act was also amended to add a representative of the uranium milling industry and another member of the public to the Radiation Control Board. Governor Leavitt signed the bill on March 26, 2002. On November 22, 2002, following confirmation by the Utah Senate, Royal I. Hansen (general public) and Robert Pattison (uranium milling industry) were appointed by Governor Leavitt to the two new Board positions established by changes to the Act.

The following statutory changes to the Utah Radiation Control Act to implement an amended Agreement for uranium recovery regulation were accomplished during the 2002 General Session of the Utah Legislature:

19-3-103(3)(d) was modified to include three representatives of the regulated industry, at least one representing the radioactive waste management industry and at least one representing the uranium mill industry; and to modify (h) to include three members of the general public, at least one whom represents organized environmental interests. This change will expand the Board to 13 members. This is to ensure that the Board remains an odd-numbered membership as required by state policy.

19-3-104(d)(i) (ii) was added to give the Radiation Control Board the authority to make rules as necessary regarding the possession, use, transfer, or delivery of source and byproduct material and the disposal of byproduct material to establish requirements, for the licensing, operation, decontamination, decommissioning, including financial assurance and the reclamation of sites, structures, and equipment used in conjunction with such activities.

19-3-105(a) was added to establish fees under 19-3-105(b)(i)(ii),(c),(d)(i)(ii),(e),(f), and (6)(a)(b) for the regulation of source and byproduct material at uranium mills or commercial waste facilities. From January 1, 2003 through March 30, 2002, fees for uranium mills or commercial sites disposing of or reprocessing byproduct material were established at $6,667 per month and $4,167 per month for uranium mills determined to be on standby status. On or after March 31, 2003, the same fees apply, but only if the NRC has granted an amended Agreement to Utah on or before March 31, 2003. After March 31, 2003, fees are to be paid (same schedule) either beginning October 1, 2003 (if amended Agreement has been achieved), or the beginning the date in which NRC grants the amended Agreement. For payment periods after July 1, 2003, the fees are established under the authority of the Department of Environmental Quality fee schedule

approved by the Utah Legislature. Annual fees are deposited in the Environmental Quality Restricted Account.

In addition to the changes described above, administrative changes were made to:

19-1-108(2)(a) which adds the fees collected as described above to the Department of Environmental Quality Restricted Account

19-3-104(1)(a)(b) was added to indicate decommissioning includes financial assurance and source and byproduct material have the same definition as described in the Atomic Energy Act. This resulted in renumbering of subsequent paragraphs - (2)(3)(4).

19-3-104(11)(b) was added to clarify that only commercial low-level waste facilities are subject to siting criteria rules (already established under Utah Radiation Control Rules R313-25-3).

There were other administrative changes that resulted in some renumbering of portions of 19-3. These are best detailed in the enrolled copy of 1 substitute SB96 found in Appendix I in which the changes to the Radiation Control Act, 19-3 are underlined and striken as appropriate.

Reservation of Authority to the United States

(Criterion 30)

State rules will be modified to reserve the authority to the United States in UMTRCA as stated in 10 CFR 150.15a as follows: establishment of minimum standards for reclamation, long-term surveillance or maintenance, and ownership of byproduct material; prior to license termination, determine that licensee has complied with decontamination, decommissioning, reclamation standards, and ownership standards; prior to license termination, the take title provision will be invoked at option of the State; authority to require monitoring, maintenance and emergency measures after license termination; authority to permit use of surface or subsurface estate, or both of the land transferred per UMTRCA; and authority to exempt land ownership transfer requirement of Section 83(b)(1)(A).

Rulemaking (Criteria 29 and 35)

(See also Appendix J)

The Division of Radiation Control has adopted applicable parts of 10 CFR 40 by reference (disclaiming any intent to regulate materials or activities over which the NRC retains jurisdiction) with necessary changes to reflect primacy of the Utah program (e.g., recognition of the Executive Secretary, etc.). With the adoption by reference of the NRC regulatory program, it is recognized that guidance has been published that is intended to provide clarification to the various regulatory elements. The Division will follow the published NRC guidance documents unless doing so will compromise protection of human health and the environment.

The DRC recognizes that it cannot make a fundamental change to an Atomic Energy Act provision (e.g., the definition of byproduct material). The DRC further recognizes that pursuant to provisions of the Radiation Control Act [19-3-104 (6) and (7)], it can adopt rules more stringent than federal law only after a public hearing and a written finding based on evidence in the record that the federal regulations are not adequate to protect public health and the environment.

Statutory authority to make rules was granted to the Board during the 2002 Utah legislative session per 19-3-104(4)(d) of the Radiation Control Act. A determination was made that the following rules would need to be modified or proposed to ensure compatibility with the requirements of 10 CFR Part 40:

R313-22-33(1)(e), "General Requirements for the Issuance of Specific Licenses" [modified]

R313-70-7(2)(b)(c)(d), "License Categories and Types of Fees for Radioactive Material Licensees" [modified]

R313-17-2(1)(a), "Administrative Procedures" [modified]

R313-15-1001, "Waste Disposal - General Requirements"

R313-19-2, "Requirements of General Applicability to Licensing of Radioactive Material" [modified]

R313-22-39, "Executive Secretary Action on Applications to Renew or Amend" [modified]

R313-24, "Uranium Mills and Source Material Mill Tailings Disposal Facility Requirements" [new section incorporating 10 CFR Part 40 by reference with exception of groundwater requirements]

The rulemaking process involves approval by the Radiation Control Board of each proposed rule for filing with the State Division of Administrative Rules. All State Agencies use the rulemaking procedures of the State Division of Administrative Rules and are bound by such procedures. Proposed rules or changes to proposed rules are published in the Utah Bulletin for public comment on the first or fifteenth of each month. The rulemaking process requires a 30-day public comment period. Announcement of the public comment period is made in the two major daily Salt Lake newspapers as well as newspapers in the impacted communities such as Moab and Blanding. Following the comment period, an assessment of needed changes is made. If no comments are received or the changes are non-substantive, the rules are submitted to the Radiation Control Board for final approval at the next Board meeting, and an effective date is established. The effective date is usually set for one week after the approval date to allow for the filing of the paperwork with the Division of Administrative Rules. Rulemaking has to be completed within 120 days of the initial filing date or the process must commence again. During this rulemaking process, comments were received from stakeholders regarding several of the rules (see Table A). As a result, it was determined that the comments required substantive changes to the initial proposed rule. For those rules, the comments were evaluated and a determination made if changes were needed (summarized in a response document). The rules requiring substantive changes then were re-drafted with the needed changes as a "change to a proposed rule". These modified rules were approved for filing by the Radiation Control Board

and submitted to the Division of Administration Rules. The rules were subject to another 30-day public comment period. Table A provides a summary of the rulemaking steps followed for each of the seven rules including when the rules were made effective.

Table A
Summary of Uranium Mills/Tailings Rulemakings
Division of Radiation Control - 2002

Rule	Approved by RCB for pc Published in State Bulletin	Commence Public Comment Period	Public comment period extension	Written comments/ Response to comments	Final approval by RCB Effective Date
R313-22-33(1)(e)	4/5/2002 5/1/2002	5/1/2002	6/5/2002	No	6/7/2002 6/14/2002
R313-70-7(2)(b)(c)(d)	4/5/2002 5/1/2002	5/1/2002	6/5/2002	Yes 6/4/2002	
R313-17-2(1)(a)	4/5/2002 5/1/2002	5/1/2002	6/5/2002	Yes 6/4/2002	
R313-15-1001	4/23/2002 5/15/2002	5/15/2002	6/28/2002	No	7/22/2002 7/22/2002
R313-19-2	4/23/2002 5/15/2002	5/15/2002	6/28/2002	Yes 7/12/2002	
R313-22-39	4/5/2002 5/15/2002	5/15/2002	6/28/2002	No	7/22/2002 7/22/2002
R313-24	4/5/2002 5/1/2002	5/1/2002	6/28/2002	Yes 7/12/2002	

Table A
Summary of Uranium Mills/Tailings Rulemakings
Division of Radiation Control - 2002

Rule	Approval by RCB Re-published in State Bulletin	Commence Public Comment Period	Public comment period ends	Written comments/ Response to comments	Final approval by RCB Effective Date
R313-22-33(1)(e)	N/A	N/A	N/A	N/A	N/A
R313-70-7(2)(b)(c)(d)	6/7/2002 7/1/2002	7/1/2002	7/31/2002	No	9/6/2002 9/10/2002
R313-17-2(1)(a)	6/7/2002 7/1/2002	7/1/2002	7/31/2002	No	9/6/2002 9/10/2002
R313-15-1001	N/A	N/A	N/A	N/A	N/A
R313-19-2	7/22/2002 8/15/2002	8/15/2002	9/16/2002	No	10/4/02 10/7/02
R313-22-39	N/A	N/A	N/A	N/A	N/A
R313-24	7/22/2002 8/15/2002	8/15/2002	9/16/2002	Yes 9/20/2002	10/4/02 10/7/02

Appendix J provides a copy of the rulemaking packet submitted to the NRC on October 9, 2002 which included each of the approved rules in "final" form as filed with the Division of Administrative Rules. Administrative rules adjudicative proceedings are found in R15-5, the entire text of Administrative Rules Procedures (R15) is provided in Appendix J as well. Also provided in Appendix J are copies of the Division response documents to stakeholder comments.

In addition, the NRC suggested in the letter confirming compatibility of the Utah rules of November 22, 2002 (see Appendix J) that a change be made to R313-24-1 by inserting "source material in" following the words "possession and use of" in the first line. This change has been accomplished by filing a non-substantive rule change (see Appendix J) with the Division of Administrative Rules on December 19, 2002. If accepted as a non-substantive change, it may be effective as early as January 1, 2003. If Administrative Rules rejects the non-substantive change explanation, the Division will proceed with normal rulemaking at either the January or March 2003 Radiation Control Board meeting.

The Utah Radiation Control rules were modified to include consideration of environmental impacts (see discussion below under **Suggested State Legislation-Model State Act)** (Criterion 31). This was accomplished in R313-24-3.

Suggested State Legislation-Model State Act (Criterion 31)

The Utah Radiation Control Rules will be modified to include consideration of environmental impacts (including radiological or non-radiological impacts, surface and groundwater impacts, consideration of alternatives to the licensed activities, and long-term impacts of licensed activities) for new licenses and major license amendments. The analysis will be included in the safety evaluation report for new licenses and in a statement of basis for major license amendments. New licenses and major license amendments will be available for public comment at least 30 days following the publication of notice. R313-17-2, 3, and 4 of the Utah Radiation Control Rules provides an opportunity for written comment, as well as a public hearing prior to

the issuance, or amendment of a license. Once the Executive Secretary of the Utah Radiation Control Board reaches a final decision on a new license or amendment to a license, parties or individuals may appeal such decisions to the Utah Radiation Control Board. The Board acts as a judge in such matters in accordance with Utah administrative procedures such as determining standing, taking testimony, and rendering a decision to either modify, set aside, or support the final decision of the Executive Secretary.

Licensing Program (Criteria 29 and 35)

The licensing process will follow the elements of the current radioactive materials program which is subject to periodic program review by the NRC. License renewal, amendments, reclamation plans or revisions to reclamation plans or new licenses may be subject to public comment and/or public hearing. Criteria of R313-17-1 through 4 of the Utah Radiation Control Rules would apply. Rule R313-17 will be modified to add the uranium recovery facility category designation as a category that public comment is applicable. The Division would follow current policy as to the differentiation between minor and major amendments and the need for public comment. This policy established in 1993 applies the following criteria:

> Minor amendments to a license do not require public comment. These amendments do not substantially alter the license conditions or reduce the capability of the licensee to protect human health and the environment.
>
> Major amendments to a license require public notice. These amendments are necessary to enable the licensee to respond in a timely manner to common variations in the types

and quantities of the materials, technological advancements, changes necessary to comply with new rules, and changes that substantially alter the facility or its operations.

Upon application for a license amendment, a determination of major or minor amendments will need to be made.

Existing NRC licenses will be transferred to the State upon program relinquishment by the NRC and will be converted into a "state license" which will include appropriate Utah regulatory citations in lieu of "Part 40" language and will incorporate the Utah administrative process (e.g., Executive Secretary) where necessary. The license conditions will remain unchanged except for the above until a license amendment request or license renewal. The current expiration date of the license will remain the same.

The Division of Radiation Control Technical Procedures for License Review will be followed during the review process (see Appendix E). The NRC Standard Review Plan for Uranium Mills and Mill Tailings as well as the checksheet will be used as guidance documents during the license review process. Licensing evaluations or analyses will include radiological safety aspects in occupational or restricted areas and environmental impacts to population or restricted areas surrounding facilities. As necessary, evaluations will include pre-licensing visits to obtain relevant information. Items which will be evaluated include, but are not limited to, the following: general statement of proposed activities; scope of proposed action; specific activities to be conducted; administrative procedures; facility organization and radiological safety responsibilities, authorities, and personnel qualifications; licensee audits and inspections;

radiation safety program, control and monitoring; radiation safety training programs for workers; restricted area markings and access controls; review of monitoring data, exposure records, license audit and inspection records as well as other records for existing mills; environmental monitoring; radiological emergency procedures; product transportation; tailing management facilities and procedures; site and physical plant decommissioning procedures, other than tailings; and employee exposure data and bioassay programs.

The environmental analysis will be part of the license review process and will consist of a detailed and documented evaluation of the following items: topography; geology and seismology; hydrology and water quality; meteorology; background radiation, tailings retention systems; interim stabilization, reclamation, and site decommissioning programs; radiological dose assessments (source terms; exposures pathways; dose commitment to individuals; dose commitment to populations; evaluation of radiological impacts to the public to include determination of compliance with State rules and Federal regulations and comparison with background values; occupational dose; radiological impact to biota other than man; and radiological monitoring programs, pre-operational and operational); impacts to quality and quantity of surface and groundwater; environmental effects of accidents; and evaluation of tailings management alternatives in terms of regulations. The staff will also review the following during preparation of the environmental analyses for a new uranium recovery facility: ecology; environmental effects of site preparation and facility construction on environment and biota; environmental effects of use and discharge of chemicals and fuels; and economic and social effects.

The Division will use the following NRC publications as guidance documents (when applicable) during the license review process: Regulatory Guide 3.11, "Design, Construction, and Inspection of Embankment Retention Systems for Uranium Mills"; 3.111, "Operational Inspection and Surveillance of Embankment Retention Systems for Uranium Mill Tailings"; 3.51, "Calculational Models for Estimating Radiation Doses to Man from Airborne Radioactive Materials Resulting from Uranium Milling Operations"; 3.56, "General Guidance for Designing, Testing, Operating, and Maintaining, Emission Control Devices at Uranium Mills"; 4.14, Radiological Effluent and Environmental Monitoring at Uranium Mills"; 8.22, "Bioassays at Uranium Mills"; 8.25 "Air Sampling in the Workplace"; 8.30, "Health Physics Surveys in Uranium Mills"; 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Mills will be As Low As is Reasonably Achievable". Other guidance documents that may also be use as resources are I.C.R.P. Report 29: "Radionuclide Release into the Environment: Assessment of Doses to Man" as well as N.C.R.P. Report 76, "Radiological Assessment: Predicting the Transport, Bioaccumulation and Utake by Man of Radionuclides Released to the Environment".

The Division's health physicist and hydrogeologist will perform operation data reviews and required the licensee to submit semi-annual radioactive material effluent release reports as well as semi-annual environmental monitoring reports. The written reports will be required to be submitted within 60 days after January and July 1 of each year. The licensee will be required to specify the quantity of each of the principle radionuclides released to unrestricted areas in liquid and gaseous effluents during the pervious six

months of operation. The data for the effluent release will be required in a manner that will permit the physicist and hydrogeologist to confirm the potential annual radiation doses to the public and confirm the dose to receptors.

The State will recognize already established performance-based license conditions for uranium mills and tailings. The State is willing to consider future performance-based license conditions on a case by case basis with each licensee. An issue that will need to be addressed is the appropriate method for substantive involvement of the public while still achieving the operational objectives of performance based licensing.

Inspection Program (Criteria 29 and 35)

There will be at least four facilities that will require inspection: Lisbon (Rio Algom), White Mesa (International Uranium), Shootaring Canyon (Plateau Resources), and Clive (Envirocare of Utah). Currently, Envirocare of Utah in Tooele County is subject to quarterly inspections by the NRC using staff from offices in Arlington, Texas sometimes supplemented by NRC headquarters staff from Rockville, Maryland. Envirocare inspections would be assigned to the "Envirocare team" and incorporated into the overall oversight and inspection schedule now in use for low-level radioactive waste.

A health physicist will be hired to inspect each of the mills at least on a quarterly basis. The mill inspection frequency schedule will be reviewed regularly and adjusted as needed for different circumstances (e.g., good compliance, standby not operating, etc.). The health physicist will be housed in the DRC office in Salt Lake City but will travel to

southern Utah at least one week per month to accomplish both regular (quarterly) and oversight inspections. This health physicist will also be responsible for the inspection of 28 other radioactive material licensees in southeast and southwest Utah. The engineer and groundwater hydrogeologist will provide inspection support as needed to the health physicist in such areas as groundwater sampling evaluations, split groundwater sampling, oversight of new engineering construction or oversight of closing facilities.

he State inspection program will incorporate all the elements of the current radioactive materials inspection program (see Appendix D for Inspection and Enforcement procedures) relevant to Part 40 uranium recovery facilities which is subject to periodic program review by the NRC. Items that will be examined during inspections will be consistent with items evaluated during licensing. The Division inspectors will perform independent surveys and sampling in addition to examining aspects of license performance as follows· administration; milling processes, including any additions, deletions or operational changes; accident and incidents; notices, instructions, and reports to workers in accordance with R313-18 rules; action taken on previous findings; physical plant facilities of the mill tour to determine compliance with regulations and license conditions; tailings waste management to determine compliance with rules and license conditions (NRC Regulatory Guide 3.11.1 see Appendix E); records; respiratory protection and bioassays to determine compliance with license conditions and R313-15 rule; effluent and environmental monitoring; training programs; and transportation and shipping.

A complete inspection will be performed at least annually and will include independent surveys and sampling. The NRC inspection form for Uranium Mills as well as the NRC Inspection Manual, Chapter 2801, "Uranium Mill and 11e.(2) Byproduct Material Disposal Site and Facility Inspection Program" will be utilized as guidance documents by the State inspectors during an inspection. Enforcement actions will be in accordance with the Utah Radiation Control Rules and existing enforcement guidance (used for the radioactive materials and low-level waste program, see Appendix D for Inspection Procedures). All enforcement actions can be appealed through the Utah Radiation Control Board and thereafter, to the appropriate court. The DRC will also conduct periodic split sampling with facilities regarding waste materials or groundwater samples.

Rules Equivalent to NRC Regulations (Criterion 32)

In addition to future adoption of applicable parts of 10 CFR 40 by reference (disclaiming any intent to regulate materials or activities over which NRC retains jurisdiction), pending the legislative process, the DRC has the following Utah Administrative Code (UAC) rules equivalent to NRC Regulations:

R313-15, "Standards for Protection Against Radiation"

R313-18, "Notices, Instructions and Reports to Workers by Licensees or Registrants-- Inspections;

R313-19, "Requirements of General Applicability of Licensing of Radioactive Material

(Packing and Transportation of Radioactive Material is in this section.)

Part of the regulation for certain portions of 10 CFR 150, "Exemptions and Continued Regulatory Authority in Agreement States and in Offshore Waters under 10 CFR 50.31(b)" is met through the Radiation Control Act, Utah Annotated Code 19-3, and will be met through the adoption of applicable parts of 10 CFR 40 by reference (disclaiming any intent to regulate materials or activities over which the NRC retains jurisdiction). The Utah Radiation Control rules will be modified to include a written environmental impact analysis process.

Pending the adoption of 10 CFR 40 and modifications of the rules, the DRC has rules that are up to-date and compatible with the NRC rules (see Appendix C, State Regulation Status form).

Instrumentation (Criterion 36) and **Laboratory Support** (Criterion 34)

The State has sufficient field and laboratory instruments to ensure licensee's control on materials and validate licensee's measurements. Appendix F has a list of the State's instruments and Instrument Calibration Procedures. Instruments are calibrated as necessary but not less than annually except for those used by the Radioactive Material Section which are calibrated semi-annually.

Laboratory instruments are available through the Division of Radiation Control as well as through the State Health Laboratory which have the capabilities for quantitative and qualitative analysis of radionuclides associated with natural uranium and its decay chain, primarily, U-238, Ra-266, Th-320, Pb-210, and Rn-222 in a variety of sample media. If the State Health Laboratory does not have the analytical capabilities needed, the Division may contract with a commercial laboratory to perform quantitative or qualitative analysis.

The State Health Laboratory has established acceptable criteria for quality assurance and participates in the National Environmental Laboratory Accreditation Program. The Environmental Protection Agency's program for laboratory performance is no longer available. The State Health Laboratory can provide the Division staff analytical reports within approximately 30 days. Arrangements can be made for the State Health Laboratory to handle a large number of samples from a major accident in a timely manner. However, the State Laboratory is limited to the number of samples it is capable of running and may have to contract a commercial laboratory for a timely turn around.

The Division has gamma spectroscopy capabilities in-house and a portable spectroscopy unit for field measurements, both qualitative and quantitative. In-house gamma spectroscopy capabilities include the following media: soil, water, and air (filters). The EG&G Ortec gamma spectroscopy unit is a germanium detector connected to a desk top computer with EG&G gamma vision software. The portable unit is a Berkley Nucleonics Corporation Smart Area Monitor. Employees in the environmental section have extensive

experience in dealing with the collection and analysis of naturally occurring radioactive material contaminants in soil, water, and air samples.

Arrangements for Discontinuing NRC Jurisdiction

As stated in the licensing program section of this application, existing NRC licenses will be transferred to the State upon program relinquishment by the NRC and will be converted into a "state license" which will include appropriate Utah regulatory citations in lieu of "Part 40" language and will incorporate the Utah administrative process where necessary. The license conditions will remain unchanged except for the above until a license amendment request or license renewal. The current expiration date of the license will remain the same. The license transfer will not give rise to a requirement to make any changes to existing facilities.

There will be a transition phase for staffing as described in the "staffing" section. Three months prior to signature of the Governor and Chairman of the amendment to the Agreement, recruitment will begin for staff as previously discussed in the staffing section. While staff are being recruited and hired, existing staff as described in the "staffing section" will conduct necessary activities relating to the uranium mill program. Existing Envirocare staff will assume the duties relating to the licensing and inspection of the Envirocare 11e.(2) facility immediately

It is anticipated that the majority of the workload will involve Envirocare and International Uranium White Mesa Mill of which existing staff have good familiarity. On the job training (mentoring) will be provided by existing staff to new staff and it is

anticipated that the new staff will be fully functional and independent within the shortest time possible. Core training will be provided as previously discussed to the new staff.

The NRC will transfer the inspection and licensing files of the four facilities to the DRC during the transition period. Any licensing or inspection actions underway or in transition at the time of program transfer will be provided to the DRC. The DRC recommends that the NRC Headquarters and Region IV representatives schedule (as an amendment Agreement appears imminent) a meeting to discuss the transition tasks that will be needed. The NRC is encouraged to complete Utah work prior to the transfer. Discussion of tasks to be deferred to the DRC should be discussed as part of the transition meeting and scheduling process. The DRC recommends that the NRC archive the license and inspection documents in accordance with federal record management prior to the transfer of site files.

DRC has provided in Appendix K copies of the original Agreement of 1984, the amended Agreement for low-level waste authority in 1990, and a draft amended Agreement for uranium mills and tailings authority for 2003.

Summary

The State of Utah is committed to administering a high quality Agreement State Program that will protect public health, public safety, and the environment. The Division has been granted statutory authority and has undertaken activities in preparation for regulating uranium mills and mill tailings. The Division has trained professional staff and will be

hiring new personnel in areas of administration, technology, and operational support. It is obtaining necessary statutory authority to assume Agreement State responsibilities regarding the regulation of uranium mills and mill tailings and has proposed adoption of regulation compatible, pending the State legislative process, with those developed and adopted by the NRC. Sufficient instrumentation to detect and measure radiation is available within the Division as well as other State agencies. Emergency response capabilities have been demonstrated and exercised. The Division has obtained necessary fiscal support to fund the Agreement State Program, including the regulation of uranium mills and mill tailings. The State is committed to full administrative support to the Agreement State program and has demonstrated its competency in control of radiation as evidenced by the adequate and compatible rating achieved during the last Integrated Material Performance Evaluation Program review.

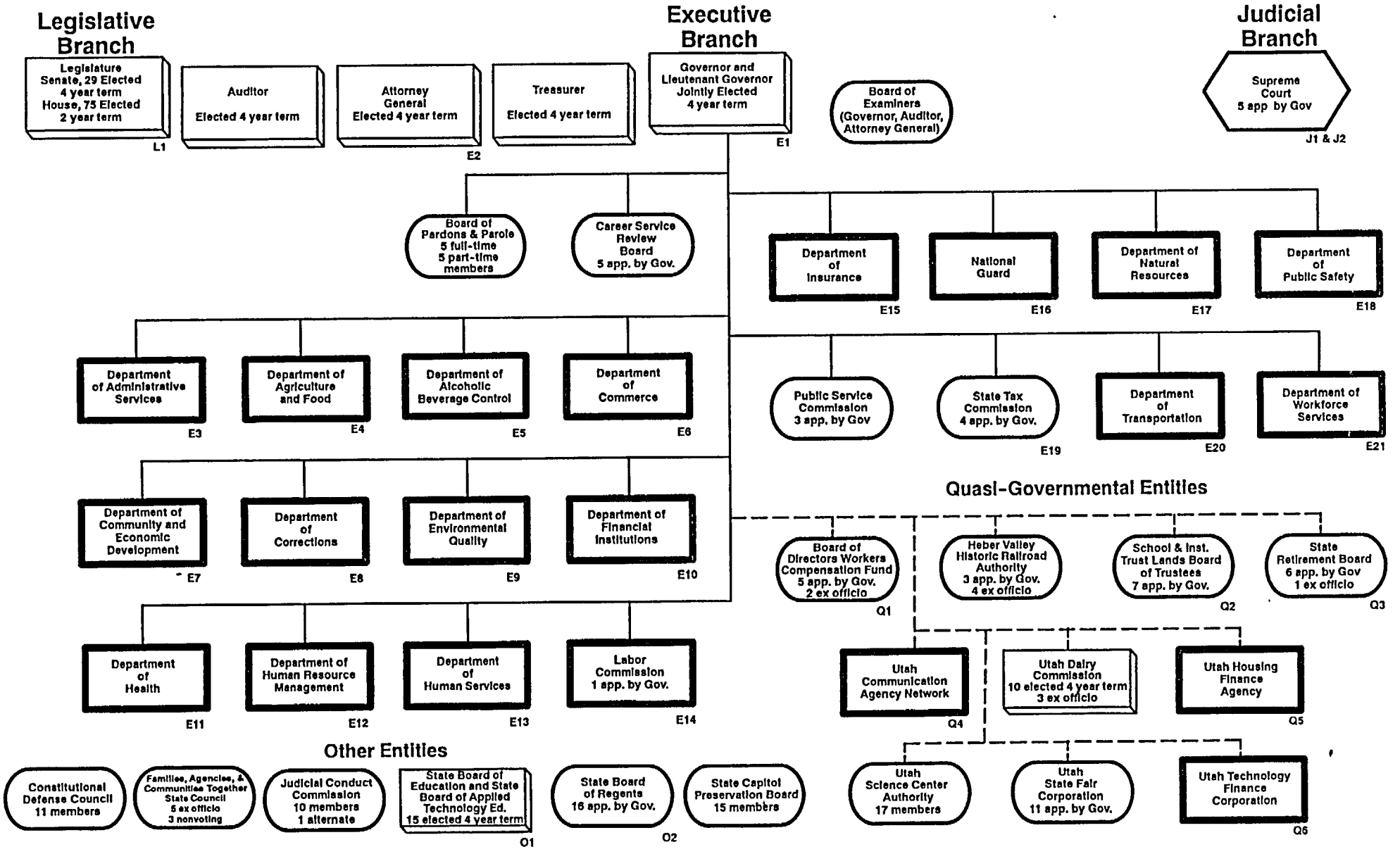
The Department of Environmental Quality remains committed to its mission of safeguarding human health and quality of life through the protection and enhancement of the environment. The Utah Division of Radiation Control will continue to protect Utah citizens and the environment from sources of radiation that constitute a significant health hazard through its radiation control programs. The State of Utah is prepared and qualifies to assume the responsibilities that would be transferred to the State upon amendment of Section 274 Agreement to include regulation of byproduct material as defined in Section 11e(2) of the Atomic Act.

Appendix A

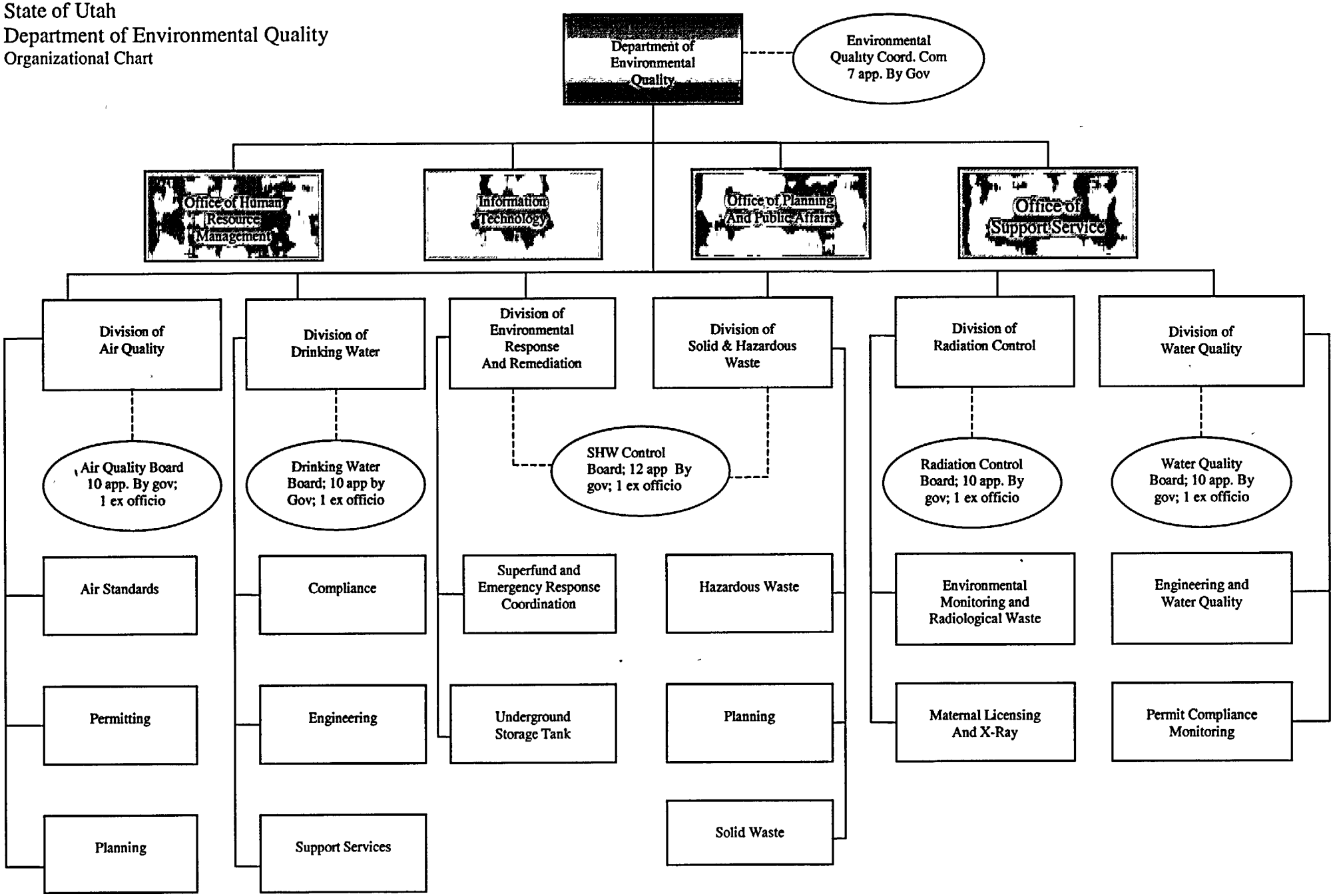
uly 2000
...nmary Chart

UTAH STATE GOVERNMENT

Prepared by
OFFICE OF LEGISLATIVE RESEARCH AND GENERAL COUNSEL
July 2000
Population 2,158,000 (estimated); Counties 29; Municipalities 236; Independent Special Service Districts 328; School Districts 40



State of Utah
Department of Environmental Quality
Organizational Chart



UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

"QUALITY PEOPLE FOR A QUALITY ENVIRONMENT"

MISSION

The mission of the Department of Environmental Quality is to safeguard human health and quality of life by protecting and enhancing the environment.

VISION

A quality environment will be achieved through:

* ***careful, open, and fair consideration of the concerns of all Utahns;***
* ***excellence in science, communications and operations;***
* ***timely, effective, and consistent response to all customers; and***
* ***actively promoting pollution prevention.***

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

"QUALITY PEOPLE FOR A QUALITY ENVIRONMENT"

VALUES

QUALITY OF LIFE

We believe clean air, water and land are valuable resources and essential to Utah's quality of life and economy.

INTEGRITY

We will have the courage to do what is right in all circumstances and to treat everyone fairly and consistently.

COMMITMENT TO PEOPLE

Each and every individual inside and outside of the organization will be treated as a valued and important person. Individual growth and esteem is of vital importance. People will be recognized for their contributions and value.

LEADERSHIP

We will promote excellence in all that we do. Creative and innovative "win-win" solutions to problems and issues will be encouraged. Risk taking and change will be strongly promoted as the "norm."

TEAMWORK

We will consider every person within the Department to be part of our team. One person's success will be everyone's. Each person's responsibilities are recognized as a critical part of the overall efforts of the Department.

SERVICE

We will provide quality service to all of our customers both internal and external. We will treat everyone courteously and responsively. Creativity and innovation will be fostered in serving our customers and responding to all concerns and requests.

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

OPERATING PRINCIPLES

* ***Recognize issues and conflicts as opportunities to build relationships.***

* ***Focus on results instead of on a "set" process.***

* ***Know and respect your audience. Keep the message SIMPLE.***

* ***Recognize and understand the strengths and limits, the abilities And resources of the people with whom we work.***

* ***EMPATHIZE. Seek to understand before you are understood.***

* ***LISTEN, LEARN, ASK. What would you have us do?***

* ***Be creative in finding cost-effective, timely, workable solutions.***

* ***Fix the problem, not the blame.***

* ***Involve others to solve problems.***

* ***Partners share information, support, and accountability***

* ***FOLLOW UP! FOLLOW THROUGH!***

* ***Recognize the needs of the people and the environment of Utah.***

Department of Environmental Quality

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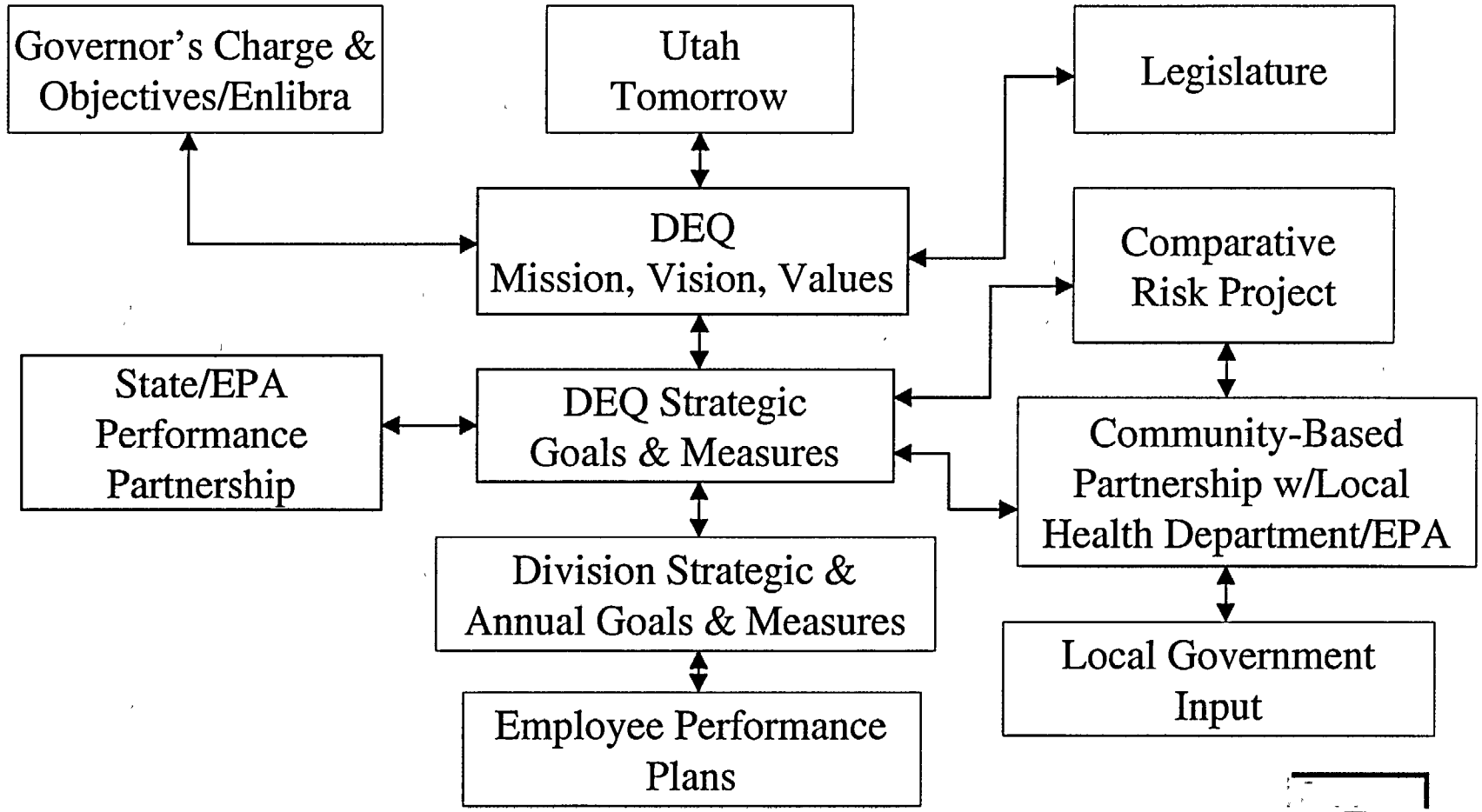
The Executive Director's Office provides leadership to the entire department.
Included in its functions are the following:

- Direct planning and policy development within the Department.
- Support implementation of State and Federal environmental laws, rules and regulations.
- Maintaining State primacy for implementing Federal programs.
- Implement community affairs and outreach programs.
- Provide technical and policy recommendations to the Governor and Legislature.
- Coordinate Department programs with Local Health Departments.
- Provide general services and program support.
- Coordinate public affairs.
- Coordinate budget and financial accounting.
- Provide human resource management services.

Utah Department of Environmental Quality

HOW WE DO BUSINESS



Division of Radiation Control

Assure Utah's citizens the lowest possible exposure to any form of radiation.

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Authorities:

- State Radiation Control Act
- Federal Atomic Energy Act

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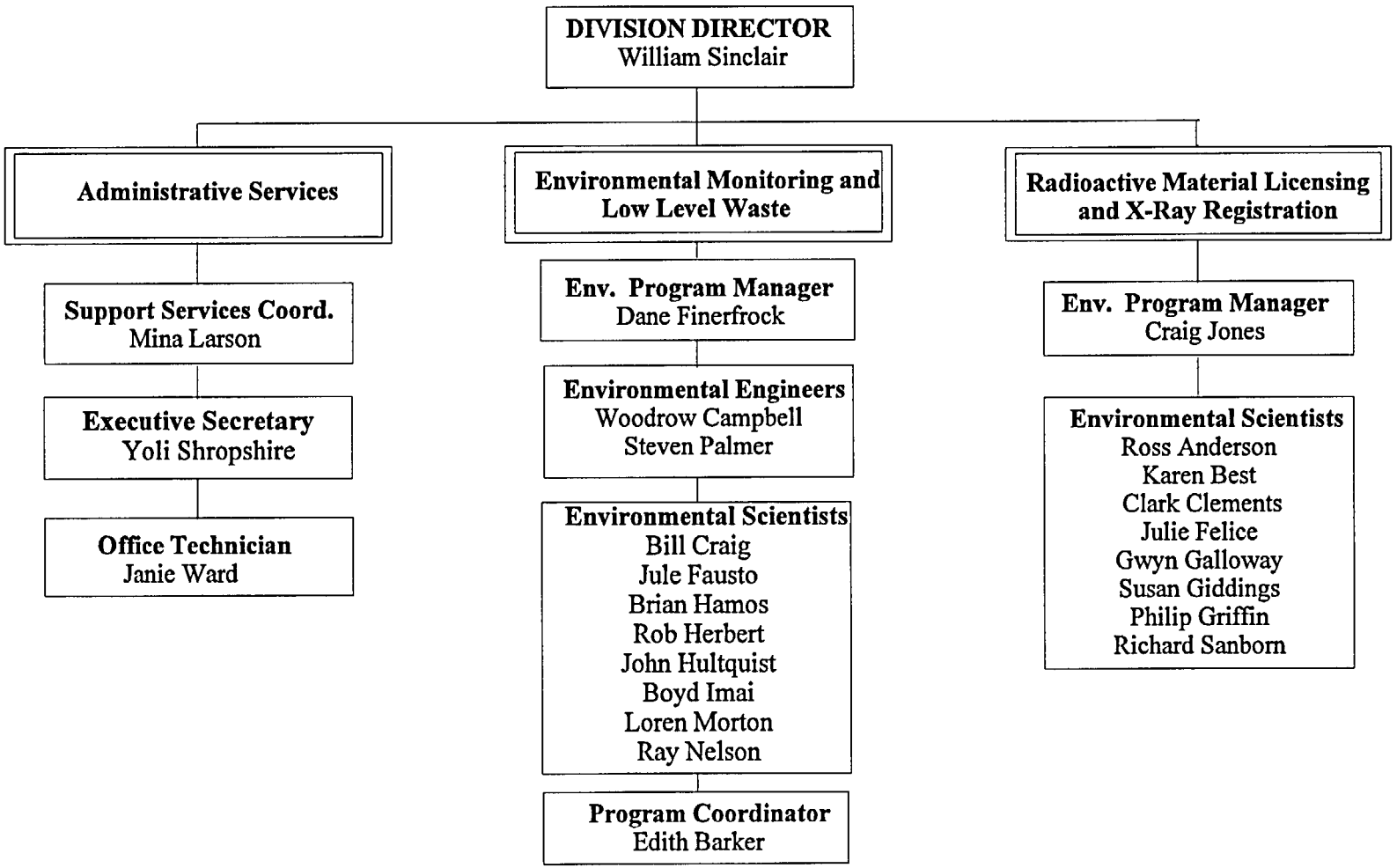
DIVISION OF RADIATION CONTROL

ORGANIZATIONAL CHART



DIVISION OF RADIATION CONTR0L

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Engineer
Hydrogeologist
Health Physicist

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DEPARTMENT OF ENVIRONMENTAL QUALITY
RADIATION CONTROL BOARD
Statute Citation: Utah Code Annotated §19-3-103

Name	Pol. Party	Representation	* Term Expires	Phone Numbers
Stephen T. Nelson, Ph.D., Chair Assist. Professor BYU Department of Geology S-389ESC Provo, UT 84602	R	Registrant or licensee representative from academia *First appointed 7/1/98*	07/01/04	801-378-8688 (work) 801-277-0937 (home) 801-378-8143 (fax)
Gary L. Edwards, Vice-Chair 455 East Valley View Circle PO Box 1176 Parowan, UT 84761	R	Local Health Department *First appointed 1996*	07/01/04	435-586-2437 (work) 435-586-4851 (fax)
Kent J. Bradford Westinghouse Electric Co. Nuclear Fuel 10000 West 900 South Ogden, UT 84404-9760	NP	Regulated industry, representing radioactive waste management industry *First appointed 10/2001*	07/01/04	801-732-2205 (work) 801-731-2338 (fax)
Robert S. Pattison 490 E. Nichols Lane Moab, UT 84532	NP	Regulated Industry *First appointed 11/22/02*	07/01/04	435-259-5287 (home)
Dr. Gregory G. Oman 1480 South Orchard Drive Bountiful, UT 84106	R	Dentist, knowledgeable about radiation; not connected with industry. *First appointed 7/2000*	07/01/04	801-298-9441 (work)
Karen S. Langley 7263 S Walnut Way SLC UT 84121	NP	Health physicist or other professional, employed in the field of radiation safety *First appointed 1998*	07/01/06	801-585-3999 (work) 801-944-1891 (home) 801-581-5807 (fax)
Tom Chism, Kennecott Kennecott Copper 5924 South 1475 West Taylorsville, UT 84118	NP	Regulated industry *First appointed7/2000*	07/01/04	801-569-7924
Gene D. White Tooele County Commissioner 47 South Main Tooele, UT 84074	D	County Government	11/22/02	435-843-3150 (work) 435-843-3400 (fax)
Linda M. Kruse 175 South West Temple, Suite 650 SLC UT 884101	D	Public	07/1/06	801-364-9300 (work) 801-364-9301 fax)
Rod O. Julander, Ph.D. Weber State Univeristy 1203 University Circle Ogden, Ut 84408	D	General public, representing organized environmental interests *First appointed 1998*	07/01/06	801-626-6697 (work) 801-363-0868 (home) 801-626-7994 (fax)
Royal Hansen 2026 East Herbert Avenue Salt Lake City, UT 84108	R	General public *First appointed 11/22/02*	07/06/06	801-521-0250 (work) 801-582-1342 (home) 801-521-9015 (fax)
Dianne R. Nielson Executive Director Department of Environmental Quality	NP	Department of Environmental Quality *Appointed 1/4/93*	N/A	801-536-4404 (work) 801-536-0061 (fax)
John W. Thomson, M.D. LDS Hospital Eight Avenue & C Street Salt Lake City, UT 84143	NP	Physician *First appointed 7/2002*	07/01/06	801-408-1146 (work)

* Board member may serve for 90 days beyond term expiration date.

Revised 12/20/02

Organization:
Staff directory
Northwest Compact
Radiation Control Board

Programs:
X-Ray
Indoor Radon
Uranium Mills
Transportation
Low Level Waste
Radioactive Materials
Non-ionizing Radiation
Generator Site Access

Information:
Public Notice
Rules
Forms
Calendar
Other Sites
Fallout Effects
High Level Waste

Contact Us At:
erbarker@utah.gov
Updated December 20, 2002

Board

The Radiation Control Board is appointed by the Utah governor with the consent c Senate and guides development of Radiation Control policy and rules in the state. Radiation Control Board holds open meetings ten times per year at locations throu Contact
Bill Sinclair, Executive Secretary, at (801) 536-4250 or by E-mail regarding agenda items.

- Member List
- Calendar
- Policies & Position Statements
  - Policy - Broad Scope Licenses - adopted May 21, 1993
  - Position statement - Health Effects from Extremely Low Frequency E Fields (ELF-EMF) - adopted December 10, 1993
  - Policy - Board members conflict of interest - adopted March 3, 1995
  - Policy - Requests by the public to be placed on the Board agenda- a August 8, 1997
  - Position statement - The White Mesa Uranium Mill - April 9, 1999
  - Position statement - Processing and Disposal of Alternate Feed Mat Uranium Mills - April 9, 1999
  - Position statement - Support of the State of Utah in amending the cu with the Nuclear Regulatory Commission to include uranium recover September 7, 2001
  - Position Statement - Qualified Experts in the X-ray Inspection Progra October 5, 2001
  - Position Statement - Citizen's State Initiative Number 1 - adopted Oc
  - Position Statement - Computerized Tomography Scanning of Health Discouraged - adopted December 6, 2002
- Agenda
- Minutes
  - December 6, 2002
  - October 24, 2002
  - October 4, 2002
  - September 2002
  - July 22, 2002
  - July 12, 2002

- June 7, 2002
- No board meeting in May 2002
- April 23, 2002
- April 5, 2002
- March 2002
- No board meeting in February 2002
- January 2002
- December 2001
- November 2001
- October 2001
- September 2001
- August 2001
- June 2001
- May 2001
- April 2001
- March 2001
- No board meeting in February 2001
- January 2001
- December 2000
- November 2000
- October 2000
- September 2000
- August 2000
- No board meeting in July 2000
- June 2000
- May 2000
- April 2000
- March 2000
- No board meeting in February 2000
- January 2000

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OFFICE OF THE ATTORNEY GENERAL
MEMORANDUM

TO: Utah Air Quality Board
Utah Water Quality Board
Utah Drinking Water Board
Utah Solid and Hazardous Waste Control Board
Utah Radiation Control Board

FROM: Fred Nelson
Assistant Attorney General

DATE: May 10, 2001

RE: **Ethics Act and Conflicts of Interest**

This memo is to provide information on ethics requirements and potential or actual conflicts of interest of members of the Board.

As you are aware, pursuant to Utah Code Annotated (UCA), Title 19, the Boards are comprised of members who by statute are representatives of various interests and groups. These statutorily-established criteria for membership on the Boards make conflicts of interest inevitable.

Applicable Law

By amendments in 1989 to the Utah Public Officers' and Employees' Ethics Act (Ethics Act) (copy attached), Board members are now covered by its various provisions. The definition of "public officer" means "all elected or appointed officers of the state . . . who occupy policy-making posts." Board members are appointed and determine state policy under their respective statutory powers. Prior to 1989, Board members were considered specifically by statute as "special employees" who were excluded from the requirements of the Ethics Act. The 1989 amendments deleted the exclusion.

In addition to the generally applicable Ethics Act, for members of the Air Quality Board, there is a specific statutory provision (UCA § 19-2-103) which requires that "(a)ny potential conflict of interest of any member or the executive secretary, relevant to the interests of the Board, shall be adequately disclosed."

In 1998 the Legislature amended the Ethics Act by clarifying that the offenses covered by this Act do not encompass actions taken under circumstances amounting to a violation of UCA § 63-56-72 or § 76-8-105. UCA § 63-56-72 (copy attached) makes it a felony for any person who in any official capacity participates in the procurement of any supplies, services,

construction, real property, or insurance for the state of Utah or any subdivision thereof if that person asks, receives, or offers to receive, from any person interested in the sale of these items or services, any emolument, gratuity, contribution, loan, reward, or any promise thereof, either for himself or for another person or organization.

In the 2000 General Session, the Legislature added provisions making it an offense to donate or to demand donations of property, money or services on a condition of granting a permit, approval, or other authorization. UCA § 67-16-5.3 and 5.6.

Under UCA § 76-8-105, a public servant is guilty of receiving or soliciting a bribe if that person asks for, solicits, accepts, or receives, directly or indirectly, any benefit with the understanding that the purpose is to influence an action, decision, opinion, recommendation, judgment, vote, nomination, or exercise of discretion. It is not a defense that the public servant was not qualified to act in the desired way, did not act in the desired way, or the benefit is not asked for, conferred, solicited, or accepted until after the public servant has performed the desired action or ceases to be a public servant.

Requirements of the Ethics Act

A. Disclosure

Under § 67-16-7 of the Ethics Act, every public officer who is an officer, director, agent, employee, or the owner of a substantial interest in any business entity which is subject to the regulation of the agency is required to disclose:

1. the position held; and

2. the precise nature and value of interest. (Does not apply where total value does not exceed $2,000. Life insurance policies and annuities are not considered in determining value.)

If the position changes or value is significantly increased, it must be reported.

Under § 67-16-6, a public officer may not receive or agree to receive compensation for assisting any person or business in any transaction involving any agency unless the public officer discloses the name and address of the public officer and the agencies involved, and provides a brief description of the transaction.

Under § 67-16-8, a public officer may not participate or receive compensation in respect to any transaction between the state and any business entity to which the public officer is also an

officer, director or employee or owns a substantial interest, unless disclosure is made as indicated below.

B. Method of Disclosure

A sworn, written statement by the public officer giving the information listed above is to be filed with the head of the agencies involved and the Utah Attorney General's Office (see attached form/outline).

C. Prohibitions

Restrictions outlined in the Ethics Act include:

No public officer shall:

1. accept employment or engage in any business or professional activity that he may reasonably expect would require or induce him to improperly disclose controlled information;

2. improperly disclose or use controlled, private or protected information acquired by reason of his position or in the course of official duties to further substantially his personal economic interest or obtain special privileges or exemptions for himself or others;

3. use or attempt to use his position to further substantially his personal economic interest or to secure special privileges or exemptions for himself or others;

4. accept employment that would impair his independence of judgment or interfere with the ethical performance of his public duties;

5. receive, take, seek, or solicit, directly or indirectly, for himself or another a gift of substantial value or a substantial economic benefit tantamount to a gift,[1]

[1] "Economic benefit tantamount to a gift" includes:
(1) a loan at an interest rate that is substantially lower than the commercial rate for similar loans; and
(2) substantially higher compensation received for private services than the fair market value of those services.

a. that would tend to improperly influence him in the discharge of his duties,

b. that the person knows or a reasonable person in that position should know under the circumstances is primarily to reward the person for official action taken,

c. if he recently has been or is or will be involved in a government action affecting the donor or lender unless a disclosure of the gift, compensation, or loan has been made in the manner described above; or

6. have personal investments in any business entity which will create a substantial conflict between his private interests and his public duties.

7. donate or to demand donations of property, money or services on a condition of granting a permit, approval or other authorization.

Conflicts of Interest

A. Discussion - Procedure

In the past, different approaches have been taken by various members of the environmental boards when they have had conflicts of interest. These approaches have included:

1. oral disclosure of the conflict before discussion and then participating in the discussion but not the vote;

2. oral disclosure of the conflict at the beginning of the discussion with no participation in discussion or the vote; or

3. oral disclosure of the conflict and physically withdrawing from the meeting when an action is being discussed and voted upon.

The approach taken by the Board member with a conflict of interest is an individual decision. While no specific law exists mandating how conflicts of interest should be resolved, the Board could establish a policy recommending how conflicts of interest should be handled.

Excluded from this definition is an occasional nonpecuniary gift of a value less than $50.00, an award publicly presented in recognition of public service, any bona fide loan made in the ordinary course of business, or a political campaign contribution.

While that policy may not be binding on a Board member, it would reflect the Board's attitude as to the best way to handle action items where there is a potential conflict of interest. Some Boards have established policies on handling conflicts of interest.

B. What is a conflict of interest?

One question which often arises is what constitutes a potential conflict of interest. It is generally considered that a potential conflict of interest is any direct and immediate interest or relationship, including financial interest, with persons or businesses regulated by or directly affected by decisions of the Board, or persons or organizations which may present requests or issues before the Board. The interest of a spouse or other members of the immediate family/household or the interest of any other person which is constructively controlled by the member is included.

It is recognized that some relationships and interests have more "potential" for being a conflict of interest than others. There are some interests and relationships which because of their nature are so "de minimus" as to be insignificant. The financial interest may be so small or the relationship so remote that it does not present an actual conflict.

Types of interests to be considered as potential conflicts of interest include relationships or interests with persons, business enterprises, or nonprofit, professional, charitable, religious, social, educational, recreational, environmental, public service, or civic organizations,

1. with which you are connected as a member, employee, officer, owner, director, trustee, partner, advisor, or consultant;

2. in which you have any continuing financial interest as a creditor or through ownership of stocks, bonds, or other securities, ownership of real property or rights in lands, or through a pension or retirement plan, shared income or otherwise; or

3. to which you are indebted financially.

DISCLOSURE STATEMENT

DEPARTMENT OF ENVIRONMENTAL QUALITY

Pursuant to Utah Public Officers' and Employees' Ethics Act,
Utah Code Ann. §§ 67-16-1 through -14.

I, _____, being first sworn, hereby disclose as follows:

1. I reside at _____

_____.

2. I was appointed as a member of the _____

Board on _____.

3. I am an officer, director, agent, employee, or owner of a substantial interest in the following business entities which are subject to regulation by the Board or the Department of Environmental Quality ("Department"):

a. Name of business entity:_____

b. Position held:_____

c. Nature and value of interest: _____

_____

_____.

NOTE: This disclosure requirement does not apply to instances where the total value of the interest does not exceed $2,000. Life insurance policies and annuities shall not be considered in determining the value of any such interest. This statement is to be filed on first becoming a public officer, and again if the position or value of interest in the business entity significantly changes. It is filed with the head of the agency with which the officer is affiliated and with the Attorney General.

4. I have solicited, received or have agreed to receive, for myself or another, compensation, loans or gifts, directly or indirectly, from the following persons or business entities who, in the recent past, now or in the near future, may be subject to Board or Department action:

a. Name of person or business entity providing compensation, loans, or gifts:

_____

b. Brief description of gift, loan, or compensation transaction and the action by the Board that may affect the person or business entity_____

_____

_____

NOTE: This disclosure requirement does not apply to an occasional nonpecuniary gift of a value less than $50.00, a public award of recognition for public service, bona fide loans from commercial lenders, or political contributions.

5. I have participated in or received or have agreed to receive compensation 1) in respect to a transaction between state agencies and a business entity as to which I am an officer, director, or employee, or own a substantial interest, or 2) for assisting persons or business entities in transactions involving state agencies, as follows:

a. Name of Agency:_____

_____

b. Name of person or business entity involved:_____

_____

c. Brief description of the transaction and nature of service performed or to be performed: _____

_____

NOTE: This disclosure statement is required to be filed for each transaction or continuing transactions with an agency. It should be filed with the head of the agency with which the transaction is being conducted and with the Attorney General, within ten days after the date of any agreement or receipt of compensation, whichever is first.

DATED this _____ day of _____, 199_____.

_____
Signature

SUBSCRIBED and SWORN to before me this ____ day of _____, 199____.

_____
Notary Public

Residing at: _____

My Commission Expires:

_____

UTAH PUBLIC OFFICERS' AND EMPLOYEES' ETHICS ACT

Current through the 2000 General Session

67-16-1 Short title.
This chapter is known as the "Utah Public Officers' and Employees' Ethics Act."

67-16-2 Purpose of chapter.
The purpose of this chapter is to set forth standards of conduct for officers and employees of the state of Utah and its political subdivisions in areas where there are actual or potential conflicts of interest between their public duties and their private interests. In this manner the Legislature intends to promote the public interest and strengthen the faith and confidence of the people of Utah in the integrity of their government. It does not intend to deny any public officer or employee the opportunities available to all other citizens of the state to acquire private economic or other interests so long as this does not interfere with his full and faithful discharge of his public duties.

67-16-3 Definitions.
As used in this chapter:
(1) "Agency" means any department, division, agency, commission, board, council, committee, authority, or any other institution of the state or any of its political subdivisions.
(2) "Agency head" means the chief executive or administrative officer of any agency.
(3) "Assist" means to act, or offer or agree to act, in such a way as to help, represent, aid, advise, furnish information to, or otherwise provide assistance to a person or business entity, believing that such action is of help, aid, advice, or assistance to such person or business entity and with the intent to assist such person or business entity.
(4) "Business entity" means a sole proprietorship, partnership, association, joint venture, corporation, firm, trust, foundation, or other organization or entity used in carrying on a business.
(5) "Compensation" means anything of economic value, however designated, which is paid, loaned, granted, given, donated, or transferred to any person or business entity by anyone other than the governmental employer for or in consideration of personal services, materials, property, or any other thing whatsoever.
(6) "Controlled, private, or protected information" means information classified as controlled, private, or protected in Title 63, Chapter 2, Government Records Access and Management Act, or other applicable provision of law.
(7) "Governmental action" means any action on the part of the state, a political subdivision, or an agency, including:
(a) any decision, determination, finding, ruling, or order; and
(b) any grant, payment, award, license, contract, subcontract, transaction, decision, sanction, or approval, or the denial thereof, or the failure to act in respect to.
(8) "Improper disclosure" means disclosure of controlled, private, or protected information to any person who does not have the right to receive the information.

(9) "Legislative employee" means any officer or employee of the Legislature, or any committee of the Legislature, who is appointed or employed to serve, either with or without compensation, for an aggregate of less than 800 hours during any period of 365 days. "Legislative employee" does not include legislators.
(10) "Legislator" means a member or member-elect of either house of the Legislature of the state of Utah.
(11) "Political subdivision" means a district, county, school district, or any other political subdivision of the state that is not an agency, but does not include municipalities.
(12) "Public employee" means a person who is not a public officer who is employed on a full-time, part-time, or contract basis by the state or any of its political subdivisions. "Public employee" does not include legislators or legislative employees.
(13) "Public officer" means all elected or appointed officers of the state or any of its political subdivisions who occupy policymaking posts. "Public officer" does not include legislators or legislative employees.
(14) "State" means the state of Utah.
(15) "Substantial interest" means the ownership, either legally or equitably, by an individual, his spouse, or his minor children, of at least 10% of the outstanding capital stock of a corporation or a 10% interest in any other business entity.

67-16-4 Improperly disclosing or using private, controlled, or protected information -- Using position to secure privileges or exemptions -- Accepting employment which would impair independence of judgment or ethical performance.
(1) It is an offense for a public officer, public employee, or legislator, under circumstances not amounting to a violation of Section 63-56-72 or 76-8-105, to:
(a) accept employment or engage in any business or professional activity that he might reasonably expect would require or induce him to improperly disclose controlled information that he has gained by reason of his official position;
(b) disclose or improperly use controlled, private, or protected information acquired by reason of his official position or in the course of official duties in order to further substantially the officer's or employee's personal economic interest or to secure special privileges or exemptions for himself or others;
(c) use or attempt to use his official position to:
(i) further substantially the officer's or employee's personal economic interest; or
(ii) secure special privileges or exemptions for himself or others;
(d) accept other employment that he might expect would impair his independence of judgment in the performance of his public duties; or
(e) accept other employment that he might expect would interfere with the ethical performance of his public duties.
(2)(a) Subsection (1) does not apply to the provision of education-related services to public school students by public education employees acting outside their regular employment,
(b) The conduct referred to in Subsection (2)(a) is subject to Section 53A-1-402.5.

Amended by Chapter 276, § 2, 2000 General Session

67-16-5 Accepting gift, compensation, or loan -- When prohibited.
(1) As used in this section, "economic benefit tantamount to a gift" includes:
(a) a loan at an interest rate that is substantially lower than the commercial rate then currently prevalent for similar loans; and
(b) compensation received for private services rendered at a rate substantially exceeding the fair market value of the services.
(2) It is an offense for a public officer, public employee, or legislator, under circumstances not amounting to a violation of Section 63-56-72 or 76-8-105, to knowingly receive, accept, take, seek, or solicit, directly or indirectly for himself or another a gift of substantial value or a substantial economic benefit tantamount to a gift:
(a) that would tend improperly to influence a reasonable person in the person's position to depart from the faithful and impartial discharge of the person's public duties;
(b) that the person knows or that a reasonable person in that position should know under the circumstances is primarily for the purpose of rewarding the person for official action taken; or
(c) if he recently has been, is now, or in the near future may be involved in any governmental action directly affecting the donor or lender, unless a disclosure of the gift, compensation, or loan and other relevant information has been made in the manner provided in Section 67-16-6.
(3) Subsection (2) does not apply to:
(a) an occasional nonpecuniary gift, having a value of not in excess of $50;
(b) an award publicly presented in recognition of public services;
(c) any bona fide loan made in the ordinary course of business; or
(d) a political campaign contribution.

67-16-5.3. Requiring donation, payment, or service to government agency in exchange for approval -- When prohibited.
(1) It is an offense for a public officer, public employee, or legislator, under circumstances not amounting to a violation of Section 63-56-72 or 76-8-105, to demand from any person as a condition of granting any application or request for a permit, approval, or other authorization, that the person donate personal property, money, or services to any

agency.
(2)(a) Subsection (1) does not apply to any donation of property, funds, or services to an agency that is:
(i) expressly required by statute, ordinance, or agency rule;
(ii) mutually agreed to between the applicant and the entity issuing the permit, approval, or other authorization;
(iii) made voluntarily by the applicant; or
(iv) a condition of a consent decree, settlement agreement, or other binding instrument entered into to resolve, in whole or in part, an actual or threatened agency enforcement action.
(b) If a person donates property, funds, or services to an agency, the agency shall, as part of the permit or other written authorization:
(i) identify that a donation has been made;
(ii) describe the donation;
(iii) certify, in writing, that the donation was voluntary; and
(iv) place that information in its files.

Enacted by ch 108, § 1, 2000 General Session

67-16-5.6. Offering donation, payment, or service to government agency in exchange for approval -- When prohibited.
(1) It is an offense for any person, under circumstances not amounting to a violation of Section 76-8-103, to donate or offer to donate personal property, money, or services to any agency on the condition that the agency or any other agency approve any application or request for a permit, approval, or other authorization.
(2)(a) Subsection (1) does not apply to any donation of property, funds, or services to an agency that is:
(i) otherwise expressly required by statute, ordinance, or agency rule;
(ii) mutually agreed to between the applicant and the entity issuing the permit, approval, or other authorization;
(iii) a condition of a consent decree, settlement agreement, or other binding instrument entered into to resolve, in whole or in part, an actual or threatened agency enforcement action; or
(iv) made without condition.
(b) The person making the donation of property, funds, or services shall include with the donation a signed written statement certifying that the donation is made without condition.
(c) The agency receiving the donation shall place the signed written statement in its files

Enacted by ch 108, § 2, 2000 General Session

67-16-6 Receiving compensation for assistance in transaction involving an agency -- Filing sworn statement.
(1) It is an offense for a public officer or public employee, under circumstances not amounting to a violation of Section 63-56-72 or 76-8-105, to receive or agree to receive compensation for assisting any person or business entity in any transaction involving an agency unless the public officer or public employee files a sworn, written statement containing the information required by Subsection (2) with:
(a) the head of his own agency;
(b) the agency head of the agency with which the transaction is being conducted; and
(c) the state attorney general.
(2) The statement shall contain:
(a) the name and address of the public officer or public employee involved;
(b) the name of the public officer's or public employee's agency;
(c) the name and address of the person or business entity being or to be assisted; and
(d) a brief description of:
(i) the transaction as to which service is rendered or is to be rendered; and
(ii) the nature of the service performed or to be performed.
(3) The statement required to be filed under Subsection (1) shall be filed within ten days after the date of any agreement between the public officer or public employee and the person or business entity being assisted or the receipt of compensation, whichever is earlier.
(4) The statement is public information and shall be available for examination by the public.

67-16-7 Disclosure of substantial interest in regulated business.
(1) Every public officer or public employee who is an officer, director, agent, employee, or the owner of a substantial interest in any business entity which is subject to the regulation of the agency by which the officer or employee is employed, shall disclose any such position held and the precise nature and value of the public officer's or public employee's interest upon first becoming a public officer or public employee, and again whenever the public officer's or public employee's position in the business entity changes significantly or if the value of his interest in the entity is significantly increased.
(2) The disclosure required under Subsection (1) shall be made in a sworn statement filed with:
(a) the state attorney general in the case of public officers and public employees of the state;
(b) the chief governing body of the political subdivision in the case of public officers and public employees of a political subdivision;
(c) the head of the agency with which the public officer or public employee is affiliated; and
(d) in the case of a public employee, with the immediate supervisor of the public employee.
(3) This section does not apply to instances where the total value of the interest does not exceed $2,000.

Life insurance policies and annuities shall not be considered in determining the value of any such interest.
(4) Disclosures made under this section are public information and shall be available for examination by the public.

67-16-8 Participation in transaction involving business as to which public officer or employee has interest -- Exceptions.
(1) No public officer or public employee shall participate in his official capacity or receive compensation in respect to any transaction between the state or any of its agencies and any business entity as to which such public officer or public employee is also an officer, director, or employee or owns a substantial interest, unless disclosure has been made as provided under Section 67-16-7.
(2) A concession contract between an agency, political subdivision, or the state and a certified professional golf association member who is a public employee or officer does not violate the provisions of Subsection (1) or Title 10, Chapter 3, Part 13.

67-16-9 Conflict of interests prohibited.
No public officer or public employee shall have personal investments in any business entity which will create a substantial conflict between his private interests and his public duties.

67-16-10 Inducing others to violate chapter.
No person shall induce or seek to induce any public officer or public employee to violate any of the provisions of this chapter.

67-16-11 Applicability of provisions.
The provisions of this chapter apply to all public officers and public employees.

67-16-12 Penalties for violation -- Removal from office or dismissal from employment.
In addition to any penalty contained in any other provision of law:
(1) any public officer or public employee who knowingly and intentionally violates this chapter, with the exception of Sections 67-16-6 and 67-16-7, shall be dismissed from employment or removed from office as provided by law, rule, or policy within the agency; and
(2) any public officer, public employee, or person who knowingly and intentionally violates this chapter, with the exception of Sections 67-16-6 and 16-6-7, shall be punished as follows:
(a) as a felony of the second degree if the total value of the compensation, conflict of interest, or assistance exceeds $1,000;
(b) as a felony of the third degree if:
(i) the total value of the compensation, conflict of interest, or assistance is more than $250 but not more than $1,000; or
(ii) the public officer or public employee has been twice before convicted of violation of this chapter and the value of the conflict of interest, compensation, or assistance was $250 or less;
(c) as a class A misdemeanor if the value of the compensation or assistance was more than $100 but does not exceed $250; or
(d) as a class B misdemeanor if the value of the compensation or assistance was $100 or less.

Amended by ch. 108, § 3, 2000 General Session

67-16-14 Unethical transactions -- Duty to dismiss officer or employee -- Right to rescind or void contract.
If any transaction is entered into in violation of Section 67-16-6, 67-16-7, or 67-16-8, the state, political subdivision, or agency involved:
(1) shall dismiss the public officer or public employee who knowingly and intentionally violates this chapter from employment or office as provided by law; and
(2) may rescind or void any contract or subcontract entered into in respect to such transaction without returning any part of the consideration that the state, political subdivision, or agency has received.

Emergency Response Phone List

Utah Department of Environmental Quality

Department of Environmental Quality Emergency Response	(24-hr)	(801)536-4123
Division of Radiation Control Office	(8am-5pm M-F)	(801)536-4250
	(FAX)	(801)533-4097
Division of Radiation Control Staff		
Bill Sinclair, Director	(Home)	(801)546-4132
Craig Jones, Section Chief, X-ray & Licensing	(Home)	(801)273-7080
Dane Finerfrock, Section Chief, Low Level Waste	(Home)	(801)485-8744
Ray Nelson, Health Physicist	(Home)	(801)266-2502
John Hultquist, Health Physicist	(Home)	(801)484-7602
Gwyn Galloway, Health Physicist	(Home)	(801)964-2035
Julie Felice, Health Physicist	(Home)	(801)966-6628

Utah Department of Public Safety

Utah Highway Patrol, Hazmat Section		
Salt Lake Dispatch	(24 Hr)	(801)887-3800
Sgt. Mark Millet	(Cellular)	(801)560-7039
	(Pager)	(801)249-8233
Division of Comprehensive Emergency Management (CEM)		
CEM Office	(24-Hr)	(801)538-3400

Federal Government

Nuclear Regulatory Commission (NRC) Operations Center	(24-Hr)	(301)816-5100
	(FAX)	(301)816-5151
Department of Energy, Region VI, Radiological Assistance Program (RAP), Idaho Falls, Idaho	(24-Hr)	(208)526-1515
Radiation Emergency Assistance Center/Training Site	(Day)	(865)576-3131
(REAC/TS) Oak Ridge, Tennessee	(24-Hr)	(865)576-1005
Environmental Protection Agency, Region 8 Denver Colorado	(24-Hr)	(303)293-1788

Approved _____ Date 8/27/2001

Bill S.

DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF THE EXECUTIVE DIRECTOR

Michael O Leavitt
Governor
R Nielson, Ph D
Executive Director
Brent C Bradford
Deputy Director

MEMORANDUM

TO: Water Quality Board

FROM: Dianne R. Nielson, Ph.D.
Executive Director

DATE: July 27, 2001

SUBJECT: Designation of Bill Sinclair as Co-Executive Secretary of the Utah Water Quality Board for Designated Radioactive Material Management Facilities

It has been the policy of the Executive Branch of Utah State Government to seek primacy of Federal environmental programs when it will benefit the State. In this regard, through the Division of Radiation Control, the State has undertaken a process to assume the responsibility for administering the program regulating uranium mills and tailings currently being administered by the Nuclear Regulatory Commission(NRC). However, since this program only regulates radionuclide contaminants, other non-radionuclide parameters have been addressed through provisions of the Utah Water Quality Act and programs promulgated under its authority. As a consequence of this regulatory arrangement, there currently exists overlapping administrative authority in the area of ground water quality protection. This overlapping issue is further compounded with the fact that the Division of Radiation Control administers certain Federal programs dealing with the commercial waste disposal of low level radioactive waste. However, that program does not impose water quality standards and protection programs comparable to that under the Water Quality Act. This results in the Division of Radiation Control oversiting the operation of such a facility for radiation hazards, while the Division of Water Quality administers the ground water protection and ground water discharge permit program. This also involves two statutory boards.

In the interest of providing a more streamlined and coordinated regulatory setting for the regulated facilities, the Divisions of Water Quality and Radiation Control have implemented administrative processes to allow more of a "one-stop shopping" when it comes to securing operational authorizations for these kind of facilities. Because the primary source of technical expertise for these facilities resides within the Division of Radiation Control, memoranda of agreement have been developed, allowing them to be the lead agency and primary contact when radioactive materials are involved. While the staff in the Division of Radiation Control may use the statutory authority of the Water Quality Act, doing so requires an active involvement by the staff in the Division of Water Quality and the Executive Secretary of the Water Quality Board. Although there were attempts to implement a similar coordination process for uranium mill facilities that are regulated by the Nuclear Regulatory Commission, the NRC rejected the concept. Continuing in its attempt to streamline the

process, the Department of Environmental Quality created a task force to formulate recommendations in this regard.

The recommendation of the task force is primarily to change the Radiation Control Act thus allowing Utah to pursue agreement state status for administering the NRC regulatory program. In addition, the task force recommends that the Division of Radiation Control continue to administer both the radioactive materials licensing and ground water discharge permits for radioactive material disposal facilities and for uranium mills. In order to do this more effectively, provision UCA19-5-104(1)(k) of the Water Quality Act allows the Water Quality Board to delegate to the Department duties, as appropriate, to improve administrative efficiency. This provision is interpreted to allow designation of the Director of Division of Radiation Control as an Executive Secretary to the Water Quality Board with the powers and duties of those stated in the Water Quality Act over a specified universe of facilities. In consultation with the Attorney General's Office, it is his opinion that, although the Board could not transfer responsibility or authority without a statutory change, it is within its powers to direct where the responsibilities are carried out.

In arriving at this option to appoint the Director of the Division of Radiation Control as an Executive Secretary, the task force felt there were a number of advantages over the other options. First, there would be no need for a statutory change to allow the ground water program for the designated facilities to be administered in the Division of Radiation Control. The DRC Director as an appointed Executive Secretary would have the legal authority to issue, administer, and enforce specific ground water permits under the authority of the Water Quality Act. This would free up the current direct oversight responsibility activities by staff in the Division of Water Quality and shift these responsibilities to the staff and an Executive Secretary in the Division of Radiation Control that have direct involvement and expertise to deal with radiologic materials. Second, the current rules which were promulgated under the Water Quality Act could continue to be used without change. Third, there would be a clear direction to the regulated facilities on which State agency would regulate them by eliminating duplicate state agency involvement. Finally, appeals of permit conditions or enforcement actions would be conducted in accordance with the Water Quality Act as has been done in the past, thus consistency with the radioactive materials facilities would be insured. Also, fragmentation of the state ground water program would be prevented by continuing to keep the policy and planning aspects of this program under purview of the Board.

RECOMMENDED BOARD MOTION: It is recommended that (1) Bill Sinclair, Director of the Division of Radiation Control, as appointed by the Executive Director, be approved as an Executive Secretary to the Water Quality Board to exercise the powers prescribed under the provisions of UCA 19-5-106 to administer the requirements of UAC R317-6 as applied to the following facilities: Envirocare, Rio Algom, International Uranium Corporation, and Plateau Resources Limited, and (2) as allowed under the provisions of UCA19-5-104(1)(k), the responsibility for administering the Ground Water Protection Rules as derived from the authority of the Water Quality Act for the referenced facilities would be within the Division of Radiation Control.

MICHAEL O. LEAVITT
GOVERNOR

STATE OF UTAH
OFFICE OF THE GOVERNOR
SALT LAKE CITY
84114-0601

OLENE S. WALKER
LIEUTENANT GOVERNOR

June 26, 2001

Richard A. Meserve, Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Meserve:

This letter is to inform you that I have directed the Utah Department of Environmental Quality, Division of Radiation Control to submit an application to amend the current agreement between the State of Utah and the Nuclear Regulatory Commission to include regulation of uranium mills and tailings. It is understood that NRC will review pertinent rules, enabling legislation, staffing and resources, and any appropriate aspects of the current Division of Radiation Control program.

In response to the needed changes to the current Agreement State program, the State of Utah is requesting that NRC allow the review of a draft application to commence without having the necessary rulemaking and legislation in place. It is the intent of the Division to pursue necessary legislative changes in the upcoming 2002 Utah legislative session (tentative schedule: January 21-February 8; February 25-March 6, 2002) with the intent of establishing the necessary legislation to enable rules to be written and staff to be hired. Since the legislative window in Utah is limited, allowing the Division to initiate the amendment process as soon as possible would expedite the amendment process. Our final application for an amended agreement would be submitted following enactment of needed legislation and adoption of rules. We would appreciate your consideration of this matter so as to facilitate the transfer of regulation of uranium mills and tailings to the Utah Division of Radiation Control in a timely and orderly fashion.

William J. Sinclair, Director of the Division of Radiation Control, Utah Department of Environmental Quality will be the direct contact for the state of Utah with the Nuclear Regulatory Commission. Please contact him at 801-536-4255 regarding any questions. Thank you for your attention to this matter.

Sincerely,

Michael O. Leavitt
Governor

MOL:DRN:dco

AGREEMENT
BETWEEN THE
UNITED STATES NUCLEAR REGULATORY COMMISSION
AND THE
STATE OF UTAH
FOR
DISCONTINUANCE OF CERTAIN COMMISSION REGULATORY AUTHORITY
AND
RESPONSIBILITY WITHIN THE STATE PURSUANT TO
SECTION 274 OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED

WHEREAS, The United States Nuclear Regulatory Commission (hereinafter referred to as the Commission) is authorized under section 274 of the Atomic Energy Act of 1954, as amended (hereinafter referred to as the Act), to enter into agreements with the Governor of any State providing for discontinuance of the regulatory authority of the Commission within the State under Chapters 6, 7, and 8, and section 161 of the Act with respect to byproduct materials as defined in sections 11e.(1) and (2) of the Act, source materials, and special nuclear materials in quantities not sufficient to form a critical mass; and

WHEREAS, The Governor of the State of Utah is authorized under Utah Code Annotated 26-1-29 to enter into this Agreement with the Commission; and

WHEREAS, The Governor of the State of Utah certified on November 14, 1983, that the State of Utah (hereinafter referred to as the State) has a program for the control of radiation hazards adequate to protect the public health and safety with respect to the materials within the State covered by this Agreement, and that the State desires to assume regulatory responsibility for such materials; and

WHEREAS, The Commission found on March 12, 1984, that the program of the State for the regulation of the materials covered by this Agreement

is compatible with the Commission's program for the regulation of such materials and is adequate to protect the public health and safety; and

WHEREAS, The State and the Commission recognize the desirability and importance of cooperation between the Commission and the State in the formulation of standards for protection against hazards of radiation and in assuring that State and Commission programs for protection against hazards of radiation will be coordinated and compatible; and

WHEREAS, The Commission and the State recognize the desirability of reciprocal recognition of licenses and exemptions from licensing of those materials subject to this Agreement; and

WHEREAS, This Agreement is entered into pursuant to the provisions of the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, It is hereby agreed between the Commission and the Governor of the State, acting in behalf of the State, as follows:

ARTICLE I

Subject to the exceptions provided in Articles II, IV, and V, the Commission shall discontinue, as of the effective date of this Agreement, the regulatory authority of the Commission in the State under Chapters 6, 7, and 8, and section 161 of the Act with respect to the following materials:

A. Byproduct materials as defined in section 11e.(1) of the Act;

B. Source materials; and

C. Special nuclear materials in quantities not sufficient to form a critical mass.

ARTICLE II

This Agreement does not provide for discontinuance of any authority and the Commission shall retain authority and responsibility with respect to regulation of:

A. The construction and operation of any production or utilization facility;

B. The export from or import into the United States of byproduct, source, or special nuclear material, or of any production or utilization facility;

C. The disposal into the ocean or sea of byproduct, source, or special nuclear waste materials as defined in regulations or orders of the Commission;

D. The disposal of such other byproduct, source, or special nuclear material as the Commission from time to time determines by regulation or order should, because of the hazards or potential hazards thereof, not be so disposed of without a license from the Commission;

E. The land disposal of source, byproduct and special nuclear material received from other persons; and

F. The extraction or concentration of source material from source material ore and the management and disposal of the resulting byproduct material.

ARTICLE III

This Agreement may be amended, upon application by the State and approval by the Commission, to include the additional area(s) specified in Article II, paragraph E or F, whereby the State can exert regulatory control over the materials stated therein.

ARTICLE IV

Notwithstanding this Agreement, the Commission may from time to time by rule, regulation, or order, require that the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source, byproduct, or special nuclear material shall not transfer possession or control of such product except pursuant to a license or an exemption from licensing issued by the Commission.

ARTICLE V

This Agreement shall not affect the authority of the Commission under subsection 161 b. or i. of the Act to issue rules, regulations, or orders to protect the common defense and security, to protect restricted data or to guard against the loss or diversion of special nuclear material.

ARTICLE VI

The Commission will use its best efforts to cooperate with the State and other Agreement States in the formulation of standards and regulatory programs of the State and the Commission for protection against hazards of radiation and to assure that State and Commission programs for protection against hazards of radiation will be coordinated and compatible. The State will use its best efforts to cooperate with the

Commission and other Agreement States in the formulation of standards and regulatory programs of the State and the Commission for protection against hazards of radiation and to assure that the State's program will continue to be compatible with the program of the Commission for the regulation of like materials. The State and the Commission will use their best efforts to keep each other informed of proposed changes in their respective rules and regulations and licensing, inspection and enforcement policies and criteria, and to obtain the comments and assistance of the other party thereon.

ARTICLE VII

The Commission and the State agree that it is desirable to provide reciprocal recognition of licenses for the materials listed in Article I licensed by the other party or by any Agreement State. Accordingly, the Commission and the State agree to use their best efforts to develop appropriate rules, regulations, and procedures by which such reciprocity will be accorded.

ARTICLE VIII

The Commission, upon its own initiative after reasonable notice and opportunity for hearing to the State, or upon request of the Governor of the State, may terminate or suspend all or part of this Agreement and reassert the licensing and regulatory authority vested in it under the Act if the Commission finds that (1) such termination or suspension is required to protect the public health and safety, or (2) the State has not complied with one or more of the requirements of section 274 of the Act. The Commission may also, pursuant to section 274j. of the Act, temporarily suspend all or part of this Agreement if, in the judgment of the Commission, an emergency situation exists requiring immediate action to protect public health and safety and the State has failed to take

necessary steps. The Commission shall periodically review this Agreement and actions taken by the State under this Agreement to ensure compliance with section 274 of the Act.

ARTICLE IX

This Agreement shall become effective on April 1, 1984, and shall remain in effect unless and until such time as it is terminated pursuant to Article VIII.

Done at Salt Lake City, Utah, in triplicate, this 29th day of March, 1984.

FOR THE UNITED STATES
NUCLEAR REGULATORY COMMISSION

Nunzio J. Palladino, Chairman

FOR THE STATE OF UTAH

Scott M. Matheson, Governor

Amendment to Agreement
Between the United States Nuclear Regulatory Commission
and the State of Utah
for
Discontinuance of Certain Commission Regulatory Authority
and
Responsibility Within the State Pursuant to
Section 274 of the Atomic Energy Act of 1954, as amended.

WHEREAS, the United States Nuclear Regulatory Commission (hereinafter referred to as the Commission) entered into an Agreement (hereinafter referred to as the Agreement of March 29, 1984) with the State of Utah under Section 274 of the Atomic Energy Act of 1954, as amended (hereinafter referred to as the Act), which Agreement became effective on April 1, 1984, and provided for discontinuance of the regulatory authority of the Commission within the State under Chapters 6, 7, and 8 and Section 161 of the Act with respect to byproduct materials as defined in Section 11e.(1) of the Act, source materials, and special nuclear materials in quantities not sufficient to form a critical mass; and

WHEREAS, the Governor of the State of Utah is authorized under Utah Code Annotated 26-1-29 to enter into this amendment to the Agreement of March 29, 1984, between the Commission and the State of Utah; and

WHEREAS, the Governor of the State of Utah has requested this amendment in accordance with Section 274 of the Act by certifying on July 17, 1989 that the State of Utah has a program for the control of radiation hazards adequate to protect the public health and safety with respect to the land disposal within the State of source, byproduct and special nuclear material received from other persons and that the State desires to assume regulatory responsibility for such materials; and

WHEREAS, the Commission found on April 30, 1990 that the program of the State for the regulation of materials covered by this amendment is in accordance with the requirements of the Act and in all other respects compatible with the Commission's program for the regulation of such materials and is adequate to protect the public health and safety; and

WHEREAS, the State and the Commission recognize the desirability and importance of cooperation between the Commission and the State in the formulation of standards for protection against hazards of radiation and in assuring that the State and Commission programs for protection against hazards of radiation will be coordinated and compatible; and

WHEREAS, this amendment to the Agreement of March 29, 1984, is entered into pursuant to the provisions of the Atomic Energy Act of 1954, as amended.

NOW, THEREFORE, it is hereby agreed between the Commission and the Governor of the State, acting on behalf of the State, as follows:

Section 1. Article I of the Agreement of March 29, 1984, is amended by deleting "and" at the end of paragraph B., by adding ";and," after the words "critical mass" in paragraph C., and inserting the following new paragraph immediately after paragraph C.:

D. The land disposal of source, byproduct and special nuclear material received from other persons.

Section 2. Article II of the Agreement of March 29, 1984, is amended by deleting paragraph E. and by redesignating paragraph F. as paragraph E.

This amendment shall become effective on May 9, 1990, and shall remain in effect unless and until such time as it is terminated pursuant to Article VIII of the Agreement of March 29, 1984.

Done at Salt Lake City, Utah, in triplicate, this 8th day of May, 1990.

FOR THE UNITED STATES NUCLEAR REGULATORY COMMISSION

Kenneth M. Carr,
Chairman

FOR THE STATE OF UTAH

Norman H. Bangerter,
Governor

"*Elements of a Utah Agreement State Program for Uranium Mills Regulation*",
Divisions of Radiation Control and Water Quality
Utah Department of Environmental Quality

August 26, 2000

Policy Statement

The State of Utah recognizes the importance of and supports the uranium mining and milling industry. The State recognizes that to remain viable at this time, uranium mills must be able to engage in activities other than milling conventional mined uranium ores, such as processing alternate feed materials for the recovery of uranium alone or together with other minerals. The State also recognizes its responsibility to ensure that all such activities are accomplished in a manner that is protective of human health and the environment. It has been a long-standing policy for the State to seek primacy for environmental programs. In this regard, the State believes that a cooperative uranium mills and tailings regulatory program will be of benefit to both the regulated community and Utah citizens. The advantages that the State can offer over the current Nuclear Regulatory Commission program include better communication with and participation of the public in uranium recovery issues, elimination of duplicative regulatory responsibilities, providing a more cost effective program for the regulated community, and establishing control of materials not currently being regulated (e.g. Pre-1978 uranium mill tailings), while maintaining a regulatory program that is adequate and compatible with existing and future NRC regulations and policy. The elements within this discussion paper provide the framework for how the State of Utah would regulate uranium mills and tailings as an Agreement State.

Statutory Changes

The Radiation Control Act would be amended to allow the Radiation Control Board to establish rules for the licensing, operation, decontamination, decommissioning, and reclamation of sites, structures, and equipment used in conjunction with possession, use, transfer, or delivery of source and byproduct material and the disposal of byproduct material(uranium or thorium mill tailings and related wastes).

The Radiation Control Act would be amended to add a representative of the uranium milling industry to the Radiation Control Board.

Rulemaking

The Division of Radiation Control (DRC) will adopt 10 CFR Part 40 and new Part 41, if and when promulgated, by reference with necessary changes to reflect primacy of the Utah program (e.g., recognition of the Executive Secretary, etc.). With the adoption by reference of the NRC regulatory program, it is recognized that guidance has been published that is intended to provide

clarification to the various regulatory elements. The Division will follow the published NRC guidance unless doing so will compromise protection of human health and the environment.

DRC recognizes that it cannot make a fundamental change to an Atomic Energy Act provision (e.g., the definition of byproduct material). DRC further recognizes that pursuant to provisions of the Radiation Control Act (19-3-104 (6) and (7)), it can adopt rules more stringent than federal law only after a public hearing and a written finding based on evidence in the record that the federal regulations are not adequate to protect public health and the environment.

DRC will reach agreement with impacted mills, outside of rulemaking, desiring to process alternate feed on an acceptable uranium content level. Productive discussions in this regard are underway. Any agreement would be "approved" by the Utah Radiation Control Board, enforced by incorporation into a license condition.

The State of Utah will clarify during rulemaking that there is no distinction between pre and post-1978 uranium and thorium tailings and wastes that would otherwise satisfy the definition of 11e.(2) byproduct material.

Funding

DRC will use a combination of annual operating fees and review fees. There will be no "inspection fees" as part of the review fees. The Division or Department will not seek a change to "radioactive waste disposal fees" either in the Radiation Control Act or in the Department of Environmental Quality fees schedule to fund the program. The costs of developing the State programs and developing guidance and regulations from time to time will not be passed on to the licensees as part of the annual operating fees or review fees or otherwise.

Staffing

Staffing will consist of the establishment of four new positions within the Division. Staffing utilized for the licensing and oversight of the Envirocare site will be drawn from existing oversight staff for that facility. A health physicist position will be established with the responsibility for radiation safety inspections of the mills and inspection of all radioactive material licensees in Southern Utah (some 28 licensees). An engineer position will be established to assist in the inspection and licensing of new facilities, upgrade of existing facilities, and closing facilities. A groundwater hydrologist position will be established to provide for inspection and licensing review relating to groundwater monitoring and corrective actions for the mills. Administrative support to the section will be provided by an Office Technician III. Management of the mill team will be under the responsibility of the Environmental Monitoring and Low-Level Waste Section. The Section name will be changed to Environmental Monitoring, Uranium Recovery, and Waste Management Section.

Inspection program

There will be at least four facilities that will require inspection: Lisbon (Rio Algom), White Mesa (International Uranium), Shootaring Canyon (Plateau Resources), and Clive (Envirocare of Utah). There will also be the possibility of inspection responsibilities for the Moab Mill Reclamation Site if cleanup responsibility has not yet been transferred to the Department of Energy. Currently, Envirocare of Utah in Tooele County is subject to quarterly inspections by the NRC using staff from offices in Arlington, Texas sometimes supplemented by NRC Headquarters staff from Rockville, Maryland. Envirocare inspections would be assigned to the "Envirocare team" and incorporated into the overall oversight and inspection schedule now in use for low-level radioactive waste.

A health physicist will be hired to inspect each of the mills at least on a quarterly basis. The mill inspection frequency schedule will be reviewed regularly and adjusted as needed for different circumstances (e.g., good compliance, standby not operating, etc.) The health physicist will be housed in the DRC offices in Salt Lake City but will travel to Southern Utah at least one week per month to accomplish both regular (quarterly) and oversight inspections. This health physicist will also be responsible for the inspection of 28 other radioactive material licensees in Southeast and Southwest Utah. The engineer and groundwater hydrologist will provide inspection support as needed to the health physicist in such areas as groundwater sampling evaluations, split groundwater sampling, oversight of new engineering construction, or oversight of closing facilities.

The State inspection program would incorporate all the elements of the current radioactive materials inspection program relevant to Part 40 uranium recovery facilities which is subject to periodic program review by the NRC. Enforcement actions will be in accordance with the Utah Radiation Control Rules and existing enforcement guidance (used for the radioactive materials and low-level waste program). All enforcement actions can be appealed to the Utah Radiation Control Board and thereafter to the appropriate court.

Licensing program

The licensing process would follow the elements of the current radioactive materials program which is subject to periodic program review by the NRC. License renewal, amendments, reclamation plans or revisions to reclamation plans or new licenses may be subject to public comment and/or public hearing. Criteria of R313-17-1 through 4 would apply. DRC would follow current policy as to the differentiation between minor and major amendments and the need for public comment.

Existing NRC licenses will be transferred to the State upon program relinquishment by the NRC and they will be converted into a "state license" which will include appropriate Utah regulatory citations in lieu of "Part 40" language and will incorporate the Utah administrative process (e.g., Executive Secretary) where necessary. The license conditions will remain unchanged except for the above until a license amendment request or license renewal. The current expiration date of the license will remain the same. The license transfer will not give rise to a requirement to make

any changes to existing facilities.

The State will recognize already established performance-based license conditions for uranium mills and tailings. The State is willing to consider future performance-based license conditions on a case by case basis with each licensee. An issue that will need to be addressed is the appropriate method for substantive involvement of the public while still achieving the operational objectives of performance based licensing.

Groundwater Authority

The Division of Radiation Control should continue to administer both groundwater permitting and radioactive materials licensing for disposal facilities and uranium mills. This process can be streamlined and made more effective by utilizing existing provisions of the Utah Water Quality Act which we believe would allow the Water Quality Board and Executive Director to designate the Director of the Division of Radiation Control as an Executive Secretary to administer provisions of this Act for the identified facilities (see UCA 19-5-106 and 19-5-104 (1),(k). This option offers several advantages including no statutory changes to the Radiation Control Act would be required, the DRC Director would be designated as an Executive Secretary of the Water Quality Board and given legal authority to issue, administer and enforce specific groundwater permits under the Utah Water Quality Act, and no separate involvement of the Division of Water Quality staff would be required although they would remain available to consult with the DRC Director regarding interpretation of rules and any other technical or procedural matters.

Additional advantages include that it would be more clear to the regulatory community regarding which agency and individuals they must deal with, thus eliminating dual involvement, permits would be issued under the current groundwater rules and policies adopted by the Water Quality Board to insure consistency with other entities regulated for the protection of groundwater by the Board, and the Division of Radiation Control would not need to undertake a separate rule making to define a groundwater protection program for these specific facilities.

Finally, appeals of permit or enforcement decisions will be conducted in accordance with the Water Quality Act through the Water Quality Board or the Executive Director of DEQ as specified in the Statute. This will insure consistency with other facilities and groundwater protection actions. Mining representation and expertise is already established in statute for the Board. This approach insures consistency with the radioactive materials licensing because the same staff will be doing both. The DRC Director will need to be careful to insure that the proper signature authority is used for the various actions that might be taken. This approach prevents fragmentation of the state groundwater protection program and maintains consistency.

Task Force Recommendation to the Department of Environmental Quality

The following motion, proposed by Bill Sinclair, was moved for a vote by David Bird, seconded by George Hellstrom.

We, the members of the Department of Environmental Quality Groundwater Authority Agreement State task force support the State of Utah in pursuing Agreement State status for uranium recovery regulation on the terms established in the revised "Elements of a Utah Agreement State Program for Uranium Mills Regulation, Divisions of Radiation Control and Water Quality, agreed to at the July 26, 2000 meeting of the task force.

Unanimously supported by task force members:
Paul Goranson, Rio Algom
Fred Craft, Plateau Resources
George Hellstrom, Envirocare of Utah, Inc.
David Bird, Utah Mining Association
David Frydenlund, International Uranium
Harvey Merrell, Grand County Council
Teryl Hunsaker, Tooele County Commission
Stephen Nelson, Utah Radiation Control Board
William J. Sinclair, Division of Radiation Control, UDEQ
Don Ostler, Division of Water Quality, UDEQ

WOODROW W. CAMPBELL, P.E.
1418 East 275 North
Layton, UT 84040
(801) 547-5006

OBJECTIVES

As an engineer, I am interested in improving our quality of life. This includes helping people through the bureaucratic red tape. This includes Water Right and Environmental Regulations.

EDUCATION/TRAINING

P.E. Professional Engineer, State of Utah Number 174790.

BSGE Bachelor of Science Degree, Geological Engineering (Geotechnical Option), University of Utah, December 1984.

EXPERIENCE

OWNER/PARTNER, HydroDynamics, Water Right Consulting (Formerly Bureaucratic Systems) July 1990 to Present.

Water consulting specifically Proof of Appropriations (Proofs) This work involves a field survey, preparation of a drawing (usually using a CAD program) and completion of the necessary documents. These documents are then submitted to the Division of Water Rights (Division) and after being reviewed and Certificate of Beneficial Use is issued I follow through until that Certificate is completed. More than 250 Proofs have been completed in many different counties throughout Utah. I have also consulted concerning water right title, buying and selling water rights, and filing various applications with the Division

ENVIRONMENTAL ENGINEER III, State of Utah, Department of Environmental Quality, Division of Radiation Control. March 1995 to Present

As an Engineer, my main duty is verifying that Licensees (including radioactive waste disposal facilities) of the Division of Radiation Control (DRC) are constructing and monitoring their facilities in accordance with standard engineering procedures, regulatory standards, and specific conditions established in their individual license. These conditions include construction quality assurance/quality control (CQA/QC), groundwater monitoring, construction design, etc. The primary responsibility is to protect human health and the environment.

Training

- Completion of 5 week course in Health Physics

ENVIRONMENTAL ENGINEER, Growth Environmental Services, Inc., (Formerly Certified Environmental Consulting) November 1992 to March 1995.

As a project manager I was able to supervise various environmental projects including the following:

- Underground storage tank (UST) removals and tightness testing;
- emergency response of oil contaminated water and wetlands; and
- remediation of contaminated sites.

Training

- Completion of an EPA approved 8 hour refresher course as a Hazardous Waste Site Worker.
- Certified Groundwater and Soil Sampler.

ENVIRONMENTAL ENGINEER, Andrulis Research Corp., May 1991 to March 1992.

I helped prepare various required environmental documents for U.S. Army Dugway Proving Ground. These included an Installation Environmental Assessment (EA), an EA for the Waste Characterization BangBox Facility, an analysis of various disposal methods for the waste stream effluent from the Optical Data Branch, and an update of the Hazardous Waste Standing Operating Procedures and Filter Management Plan for the Chemical Laboratory.

Training

- Completion of an EPA approved 8 hour refresher course as a Hazardous Waste Site Worker.

ENVIRONMENTAL ENGINEER II, State of Utah, Department of Environmental Quality, Division of Solid and Hazardous Waste. June 1990 to May 1991.

This position is similar to the position listed above at the Division of Radiation Control I was in the compliance and enforcement section in the RCRA program

Training

- Completion of an EPA approved 40 hour Personnel Protection and Safety Course.
- RCRA Orientation Course
- Inspector Training Course

ENGINEER II, State of Utah, Department of Natural Resources, Division of Water Rights. October 1987 to June 1990.

As the Assistant Area Engineer in the Weber Area Office my main responsibilities were administering water rights in accordance with the established regulations and the Divisions rules and policies. Various projects included the following:

- Field checking Elections, updating title and issuing Water Users Claims;
- Verifying individual files in the main data base;
- Helping the public file various applications; and
- issuing various approvals including memorandum decisions.

CIVIL ENGINEERING TECHNICIAN, U.S. Army Corp of Engineers, Salt Lake City Regulatory Office. August 1986 to October 1987.

Under Section 404 of the Clean Water Act, I helped regulate the deposition of fill material into a water of the United States including Wetlands This work included stream and lake alterations below the ordinary high water mark and the mapping of wetland areas

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: Woody Campbell Date of Hire: February 27, 1995

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree	12/84		Geological Engineering, University of Utah
Program Orientation	3/95		
Review of the UDRC Rules	3/95		
Review of the Location of the Regulatory Guides and Reference Materials	3/95		
Essentials of Inspection			
Essentials of Licensing			
SPECIALIZED TRAINING			
Elements of Health Physics (5 wk)	3/8/96		
Elements of Nuclear Medicine			
Elements of Medical Therapy			
Elements of Industrial Radiography			
Elements of Transportation	7/2001	DF	
Elements of Well Logging			
Elements of Pool Irradiators			
Elements of Environmental Monitoring			
Radiological Emergency Response Operations (RERO)			
ADVANCED TRAINING			
Advanced Health Physics			
Elements of Investigations			
OTHER TRAINING			
Personnel Protection and Safety.	8/17/90		
8 hr. SARA/OSHA Supervisor	11/12/93		
Groundwater & Soil Sampler Cert.	1/29/94		

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Training Areas	Date Completed	Management Initials/Signature	Comments
OTHER TRAINING (cont'd)			
8 hr. OSHA CFR-29 1910.120	12/1/94		
Hydrologic Evaluation of Landfill Performance Modeling Workshop	8/11/95		
Mitigation Rad. Transp. Emerg.	9/19/95		
Clay Liners and Covers for Waste Disposal Facilities	5/17/96		
Intro. to Groundwater Invest.	6/27/96		
Gen. HP Pract. for Uran. Recovery	2/6/97		
Radon Measurement Operator	2/21/97		

Clark T. Clements
460 East Blaine Avenue
Salt Lake City, UT 84115

(801) 536-4265 (work)
(801) 933-4886 (home)

OBJECTIVE

To obtain a professional position in the field of Environmental Science where my 12 years of direct experience, skills, and knowledge of radiation protection can be utilized in order to promote both regulatory compliance and safety. I view the Environmental Scientist position as a challenging opportunity to further my professional growth, as well as creating the opportunity for me to assist in protecting both the environment and the public.

QUALIFICATIONS

Qualifications: As a professional radiation safety analyst I have experience performing the following functions: 1) Conducting compliance surveys of facilities where licensed radioactive materials are used. 2) Preparing written summaries of observations to document regulatory compliance. 3) Reviewing radiation safety plans and Radiation Protection Procedures. 4) Participated in Emergency response training involving both hazardous chemicals and radioactive material. 5) Assisted in collecting and analyzing environmental samples. 6) Analyzing samples to quantitatively measure levels of radioactivity for bioassays and surface contamination. 7) Evaluating dosimetry requirements for both personnel and laboratory facilities. 8) Evaluating dosimetry reports and performing appropriate verifications and investigations. Providing technical radiation safety input for development of computer database support for radiation protection program. 9) Calibrated survey instruments and conducted performance testing of Fume hoods. 10) Received and surveyed radioactive shipments. 11) Prepared excepted package limited quantity shipments. 12) Provided in-service training to radiation workers.

As a consultant Radiation Safety Officer (RSO) I have performed the following Radiation Safety Officer functions: 1) Completed application for a radioactive materials license. 2) Implemented the radiation safety program in accordance with the Utah Radiation Control Rules and license conditions. 3) Applied for amendments to my client's Radioactive Materials License. 4) Developed the radiation protection and chemical hygiene program 5) Conducted detailed audits of both the radiation safety and chemical hygiene programs providing written summaries and recommendations for program improvements. Interfaced with management representative to implement correct actions. 6) Developed and conducted laboratory safety training pursuant to compliance with 29 CFR 1910.1450 and commitments made in the radioactive materials license application. Applied for hazardous material permits, EPA site license permits, and assisted in hazardous material and radioactive waste shipments. 7) Developed exposure control plan, emergency evacuation plan, blood borne pathogen plan. 8) Evaluated personnel for dosimetry.

EMPLOYMENT

ENVIRONMENTAL SCIENTIST III — YEARS EMPLOYED (JUNE 2001 - PRESENT)

Department of Environmental Quality
Division of Radiation Control
Salt lake City, Utah

Responsibilities:

- Reviews, evaluates, and assesses applicant's submissions of limited scope licensing actions
- Considers and confirms proper application of health physics principles related to radioactive material licensing actions
- Maintains record of decisions for public inspections
- Prepares formal licensing document for issuance by Executive Secretary
- Evaluates adequacy of licensee's radiation protection program, instruments and equipment, exposure controls, and surveys and surveys by interviewing personnel, reviewing records or reports, and making personal observations
- Documents observations, finds and impressions
- Summarizes preliminary findings with the licensee management personnel at close out meeting
- Violations are categorized with an appropriate Severity Level, and escalated as necessary
- Ensure that licensees have established and are adhering to their ALARA program

RADIATION ANALYST
University of Utah
Radiological Health Department
Salt lake city, UT. 84112

YEARS EMPLOYED (1989 -2001)

Responsibilities:

- Perform routine audits of research laboratories
- Perform start up and close out surveys
- Provide initial practical radiation safety training to radioactive material users
- Provide refresher in-service training to radioisotope users
- Evaluate personnel dosimetry requirements
- Evaluate radiation protection program(s)
- Prepare detailed survey reports and summaries
- Perform Fume Hood performance test
- Calibrate survey instruments
- Survey packages for radioactive shipments
- Ensure that ALARA is implemented in University of Utah radiological safety operations

Accomplishments:

- Assisted the Director of radiological health in updating the University of Utah Radiation Safety Manual
- Helped structure and define the Radiation safety data base
- Developed laboratory safety program for student labs
- Restructured the safety program for the Hazardous Waste Facility
- Provided safety training for the Minorities Program in the School of Medicine
- Developed comprehensive chemical safety, fire safety, electrical safety, and bio-hazard training presentation(s) in accordance with OSHA's Laboratory Standard

ENVIRONMENTAL CHEMIST
ARSARCO, INC.
t Lake City, UT

YEARS EMPLOYED (1988 - 89)

Responsibilities:

- Performed analysis for trace metal and heavy metal analysis
- Monitored company employees for occupational exposures to toxic metal
- Assisted management in making determinations about personnel reassignments to duties in low exposure areas
- Performed analysis on EPA samples using graphite furnace spectrophotometry
- Trained and supervised employees on the night shift
- Maintained QA program for Spectrometry Section

RESEARCH SPECIALIST AND QA MANAGER FOR DATABASE
Associated Regional and University Pathologist
Salt Lake City, UT

YEARS EMPLOYED (1984 -1988)

Responsibilities:.

- Ensured correct entering of patient data for lab test to be performed
- Worked with computer manager to update database
- Performed Competitive Binding assays for various clinical test
- Radiation Safety Officer for RIA lab
- Performed general lab surveys to ensure contamination control
- QA Manager for Radioimmunoassay) lab
- Calibrated Gamma well counter

complishment:

- Authored the Editor's Guide for QA of patient data entry and lab test request

PHYSICAL THERAPY ASSISTANT — YEARS EMPLOYED (1981 - 1984)
Veterans Administration Medical Cente
Salt Lake City, UT

Responsibilities·

- Scheduling of hydrotherapy patients
- Provided patient hydrotherapy
- Applied post hydrotherapy standard dressing to patient wounds
- Patient treatment with various modalities, i.e., Ultrasound, Traction, Diathermy, Therapeutic Massage
- Assisted patients in Range of Motion exercises and therapy
- Maintained sterile environment in the in hydrotherapy section
- Provided patient education with respect to treatment regimen and exercises

Accomplishments:

- Upgraded patient care by improving cross contamination control and Bio-safety
- Applied environmental aesthetics concepts to improve patient environment

LAB TECHNICIAN — YEARS EMPLOYED (1977 - 1981)
Veterans Administration Medical Center
Salt Lake City, UT

Responsibilities:

- Performed DNA extractions and sized DNA for tissue culture transfections
- Cultured and harvested Rous Sarcoma virus
- Performed protein sequencing
- Performed UV spectrophotometer analysis of DNA and proteins
- Made stock solutions and maintained reagents for biochemistry section
- Maintained incubator and hatching schedule for avian experimental population
- Performed animal injections
- Performed animal surgery to remove tumors and identify metastatsis
- Drew blood on research animals for analysis
- Reviewed scientific papers for

Accomplishments·

- Authored paper on Critique Virogene Hypothesis and the Asian Origin of Man

EDUCATION

B.S. PHYSICAL ANTHROPOLOGY — YEARS ATTENDED (1977 - 80)
University of Utah
Salt lake City, Utah

Accomplishments :

Scholastic Achievement Award 1979

M.S. BIOLOGICAL ANTHROPOLOGY/GENETICS (PENDING) — YEARS ATTENDED (1981 - 83)
University of Utah
Salt lake City, Utah

Accomplishment:

- Introduced Molecular Biology concepts and techniques to University of Utah Anthropology Department

ADDITIONAL TRAINING

- Army Reserve Nuclear Biological Chemical (NBC) training
- University of Utah Radiation Safety Training
- Operation of J. L. Shepard & Associates Model Mark I-30 Irradiator
- Hazardous Material Transportation
- Hazardous Material Waste Management
- Advanced Hazardous Material Waste Management
- Core Concepts In Industrial Hygiene
- Chemical Safety I
- Chemical Safety II
- Personal Protective Equipment
- OSHA Specific Chemicals Standards
- Respiratory Protection
- Medical Management for Radiological Emergencies
- Electrical Safety
- Bio-safety Blood Borne Pathogens
- Fire Safety
- USNRC Introductory Health Physics
- USNRC Licensing Course
- NTS Nuclear Testing Services Training Course

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: Clark T. Clements Date of Hire: June 25, 2001

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree	1980	CW Jones	
Program Orientation	7-3-01	CW Jones	
Review of the UDRC Rules	6-27-01	CW Jones	
Review of the Location of the Regulatory Guides and Reference Materials	6-27-01	CW Jones	
Essentials of Inspection			Sep 01 course cancelled
Essentials of Licensing	9-14-01	CW Jones	
SPECIALIZED TRAINING			
Introductory Health Physics (1 wk)	7-20-01	CW Jones	H-117
Elements of Nuclear Medicine			
Elements of Medical Therapy			
Elements of Industrial Radiography			
Elements of Transportation			
Elements of Well Logging			
Elements of Pool Irradiators			
Elements of Environmental Monitoring			
Radiological Emergency Response Operations (RERO)			
ADVANCED TRAINING			
Advanced Health Physics			
Elements of Investigations			
OTHER TRAINING			

Julie Rupp Felice

EDUCATION:

B.S. Utah State University, Logan, Utah (June, 1977)

CERTIFICATION:

Supervisory Certificate (June, 1996)
Issued by the Utah Department of Human Resource Management in conjunction with The University of Utah Center for Public Policy and Administration.

Manager Certificate (January, 1997)
Issued by the Utah Department of Human Resource Management in conjunction with The Utah System of Higher Education.

Certified Public Manager (July, 1997)
Issued by the Governor's Office of the State of Utah and the Utah Department of Resource Management in conjunction with the Utah System of Higher Education

ASNT IRRSP Senior Proctor (March, 1999)
Successful completion of The American Society for Nondestructive Testing, Inc. (ASNT) IRRSP Senior Proctor Training Program

PROFESSIONAL TRAINING:

U.S. Nuclear Regulatory Commission Sponsored Training Courses:

Introduction to Licensing Practices and Procedures (09/25/89 to 09/29/89)
Teleconference, "Overview of Revisions to 10 CFR 20: Standards for Protection Against Ionizing Radiation" (09/29/89)
Safety Aspects of Industrial Radiography (09/24/90 to 09/28/90)
Gas & Oil Well Logging for Regulatory Personnel (11/05/90 to 11/09/90)
Sealed Sources and Device Workshop (09/24/91 to 09/27/91)
Inspection Procedures Course (07/27/92 to 07/31/92)
Transportation of Radioactive Materials (09/27/93 to 10/1/93)
Two Week Health Physics Technology Course (03/12/95 to 03/24/95)

Oak Ridge Associated Universities:

Medical Uses of Radionuclides (08/13/90 to 08/17/90)
Five Week Health Physics & Radiation Protection Course (07/08/91 to 08/09/91)
One Week Radiation Protection Engineering Course (12/09/91 to 12/13/91)

The Advanced Health Education Center
(H-313) Teletherapy and Brachytherapy Course (03/13/00 to 03/17/00)

Conger & Elsea, Inc.
(G-205) Root Cause/Incident Investigation Workshop (07/31/00 to 08/04/00)

U.S. Nuclear Regulatory Commission Sponsored Workshops:
Environmental Issues Workshop (09/28/92 to 09/30/92)
Site Decommissioning Management Plan Workshop (03/23/94)
Workshop on the Nuclear Material Event Database (05/11/94)
Events Reporting Workshop (02/8/95 to 02/9/95)
Sealed Source and Device Evaluation Workshop (09/12/95 to 09/15/95)
(HP-401) Health Physics Topical Review,
"New Modalities in Teletherapy and Brachytherapy" (01/22/96 to 01/23/96)

U.S. Nuclear Regulatory Commission and Conference of Radiation Control Program Directors, Inc. (CRCPD) Sponsored Training:
Nuclear Materials Events Database Software and Management of Unwanted Radioactive Material (08/15/01 through 08/16/01)

U.S. Department of Energy Sponsored Training:
First Responders Radiological Transportation Emergencies Course (08/29/89)
Medical Management in Radiation Accidents (05/14/92)
Emergency Response Orientation Training (08/23/94)
Mitigation Radiological Transportation Emergencies Course (09/19/95)

Columbia University, Center for Risk Communication:
Environmental Communication Workshop (03/30/92 to 04/03/92)

U.S. Department of Energy and U.S. Environmental Protection Agency Sponsored Training:
(EVN351) Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) Training (07/28/98 to 07/30/98)

U.S. Federal Emergency Management Agency, Emergency Management Institute:
First Response to Transportation Emergencies Involving Radioactive Materials (07/12/89 to 07/13/89)
Radiological Emergency Response Study Course [IS-301] (11/05/93)
Radiological Emergency Response Operations Course (12/05/93 to 12/11/93)

Idaho National Engineering and Environmental Laboratory in conjunction with the Eastern Idaho Technical College and the State of Utah:
Radioactive Material Transportation Course (04/28/97)

State of Utah Sponsored Training:
DEQ Emergency Response Plan Refresher Training (06/07/00)

Other Training:

University of Utah, Radiological Health Department:
Radiation Safety Training Course (04/29/83)

Troxler Electronic Laboratories:
Training Course for the Use of Nuclear Testing Equipment (06/01/90)
Troxler Radiation Safety Officer Course (10/14/94)

Patterson Dental:
Quality Assurance Compliance Testing Seminar (12/04/95)

RadCal Corporation:
Training on Model 9010 Radiation Monitor Controller (07/2/96, 07/11/96)

Certified Public Manager Program
Leaders' and Teams' Reaction Course (06/23/97)

Salt Lake County Fire Department
"Community Emergency Response Team" (CERT) Disaster Preparedness Program
(09/99 through 11/99)

PROFESSIONAL EXPERIENCE:

Health Physicist (1989-Present)
Utah Department of Environmental Quality
Division of Radiation Control
Salt Lake City, Utah

Radiation Analyst (1984-1989)
University of Utah
Radiological Health Department
Salt Lake City, Utah

Radiation Safety Dosimetrist (1980-1984)
University of Utah
Radiological Health Department
Salt Lake City, Utah

MEMBERSHIPS:

Health Physics Society (HPS)
Plenary member since 1987

Great Salt Lake Chapter of HPS
Member since 1985
Local Arrangement Committee for 1987 HPS Annual Meeting
Secretary Treasurer (1987-1991)
President Elect (1991-1992)
President (1992-1993)
Chairperson, Science Teacher Workshops (1994-1995)

Conference of Radiation Control Program Directors, Inc. (CRCPD)
Associate member since 1990
Assisted with CRCPD Conference held in Salt Lake City, Utah (1990)

Utah Society of Certified Public Managers (USCPM)
CPM member since 1997
Director at Large, Board of Directors (1998)
Utah Delegate to AACPM Educational Symposium, Biloxi, Mississippi (1998)
Director at Large, Board of Directors (1999)
Utah Delegate to AACPM Educational Symposium, Baton Rouge, Louisiana (1999)
President-Elect (2000)
Utah Delegate to AACPM Educational Symposium, St. Pete Beach, Florida (2000)
President (2001)
Co-Chair, 3rd Annual Managers Conference (2001)
Chair, Strategic Planning Committee (2001)
Utah Delegate to AACPM Educational Symposium, Scottsdale, Arizona (2001)

American Academy of Certified Public Managers
CPM member since 1997
Member, Bylaws and Ethics Committee (1999, 2000)
Member, Board of Elections Committee (1999)
Member, Henning Award Committee (2000)
Chair, International Outreach Committee (2000, 2001)
Member, Orientation Program for New Societies Committee (2001)

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: Julie Felice Date of Hire: May 5, 1989

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree	6/77	CW Jones	B.S., Education, USU
Program Orientation	5/89	CW Jones	
Review of the UDRC Rules	5/89	CW Jones	
Review of the Location of the Regulatory Guides and Reference Materials	5/89	CW Jones	
Essentials of Inspection	7/31/92	CW Jones	
Essentials of Licensing	9/29/89	CW Jones	
SPECIALIZED TRAINING			
Elements of Health Physics (5 wk)	8/9/91	CW Jones	
Elements of Nuclear Medicine	8/17/90	CW Jones	
Elements of Medical Therapy			
Elements of Industrial Radiography	9/28/90	CW Jones	
Elements of Transportation	10/1/93	CW Jones	
Elements of Well Logging	11/9/90	CW Jones	
Elements of Pool Irradiators			
Elements of Environmental Monitoring	12/13/91	CW Jones	engineering
Radiological Emergency Response Operations (RERO)	12/11/93	CW Jones	
ADVANCED TRAINING			
Advanced Health Physics	3/24/95	CW Jones	no cert.
Elements of Investigations			
OTHER TRAINING			
Radiation Safety Training	4/29/83	CW Jones	
1st Respondrs Rad. Transp. Emerg.	8/29/89	CW Jones	
Troxler Rad. Safety & Gauge Ops.	6/1/90	CW Jones	

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Training Areas	Date Completed	Management Initials/Signature	Comments
OTHER TRAINING (cont'd)			
NTS Rad. Safety & Gauge Ops.	3/14/90	CW Jones	
Sealed Sources & Devices Wkshp	9/27/91	CW Jones	
Environmental Communications	5/1/92	CW Jones	
Environmental Issues Workshop	9/30/92	CW Jones	no cert.
ISO-301 Rad. Emergncy Response	11/5/93	CW Jones	
Site Decommissioning Management Plan Workshop	3/23/94	CW Jones	no cert.
Workshop on the Nuclear Material Event Database	5/11/94	CW Jones	no cert.
Rad. Material Transportation Emergency Response Orientaion	8/23/94	CW Jones	
Troxler Radiation Safety Officer	10/14/94	CW Jones	
Events Reporting Workshop	2/9/95	CW Jones	
Sealed Source & Device Evaluation Workshop	9/15/95	CW Jones	
Mitigation Rad. Transp. Emerg.	9/19/95	CW Jones	
Health Physics Topical Review	1/23/96	CW Jones	
Multi-Agency Radiation Survey & Site Investigation Manual	7/30/98	CW Jones	
Teletherapy and Brachytherapy Course (H-313)	3-17-00	CW Jones	
Root Cause/Incident Investigation Workshop (G-205)	8-4-00	CW Jones	
NMED Training Session	8-16-01	CW Jones	no cert.

RESUME

DANE L. FINERFROCK
1732 East 1700 South
Salt Lake City, Utah 84108

EDUCATION

B.S. in Meteorology 1970
University of Utah
Salt Lake City, Utah

B.S. in Biology 1974
University of Utah
Salt Lake City, Utah

EXPERIENCE

Environmental Health Manager
Utah Department of Health, Bureau of Radiation Control
(April 1988 - Current)

Administrative responsibilities for four health physicist. Duties include determining staff assignments, performance evaluations, project budgeting and progress evaluations. Prepare and review staff reports.

Technical duties include Radon-in-Residences monitoring program, statewide environmental radiation monitoring program, licensing and inspection of low-level radioactive waste disposal facility, and inactive uranium mill tailings remedial action program.

Health Physicist
Utah Department of Health, Bureau of Radiation Control
(May 1984 to April 1988)

Duties included development and implementation of a statewide radon-in-residences monitoring program. Quality assurance and quality control audits of the health physics and radiation safety program for the Salt Lake City uranium mill tailings remedial action project. By-product material license application review, licensing and compliance inspections of various users of radioactive materials throughout Utah as an Agreement State.

Preparation and implementation of the health physics and radiation safety plan for uranium mill tailings remedial action project in Utah.

Determination of what type, how and where, soil, water, vegetation, air and food samples need to be collected for appropriate analysis. Once analysis is completed, interpretation and documentation of results, and where necessary, recommendations for appropriate actions.

Section Leader/Health Physicist
Ford, Bacon and Davis, Salt Lake City, Utah
(October 1981 - April 1984)

Administrative responsibility for the technical management of three scientists and four technicians in support of State and Federal government and industry contracts.

Prepare proposals, market hazardous waste, health physics and nuclear group services, direct projects in accordance with contract requirements, determine staff assignments, monitor project work, prepare and review staff reports, responsible for NRC by-product licenses.

Responsible for all health physics activities including instrumentation, personnel dosimetry, environmental monitoring and sampling, sample analysis, dose assessment and risk analysis.

Developed a radiological control plan and health physics and safety plan for uranium mill tailings remedial action contract and instrumentation use and calibration protocols. Other contract work has included permitting for a Federal Energy Regulatory Commission project, instrumentation for low-level radioactive waste test facility at the NTS, hazardous waste assessments.

As a meteorologist, I prepared climatologic and meteorologic sections for environmental assessments and acted as a project liaison with consultants for other proposals and contracts.

Health Physicist
Utah Department of Health, Bureau of Radiation and Occupational Health
(September 1979 - September 1981)

Staff responsibility for the development, implementation and operation of the radiation control program of the State of Utah. Within this context, several functions were performed:

Project coordination for Uranium Mill Tailings Remedial Action Program - Responsibilities included: assessment and evaluation of radiation exposure due to mill tailings; maintain liaison and coordinate Federal, State and local government activities; conduct and assess environmental surveys of tailings locations; interface with the public to secure their willing participation in the mill tailings remedial action program. Serve as technical staff to a Task Force of local businessmen, government and concerned citizens for the Mill Tailings Program.

Environmental Monitoring - determine requirements for and maintain air, water and soil monitoring programs. Collect, analyze, document and interpret results, and prepare recommendations for appropriate policy decisions.

Promulgation, inspection and enforcement of regulations where State jurisdiction allows; perform inspections and enforce State-imposed standards.

Radiation Emergency Response Team Member

Radiation Analyst
University of Utah, Radiological Health Department
Salt Lake City, Utah
(1977 - September 1979)

Radiation surveys of laboratories throughout the University; performed analytical tests on personnel dosimeters; maintenance and calibration of instrumentation; assist in the assessment of radiation doses received by personnel; advise laboratories on proper radiation safety. Other responsibilities included liquid scintillation counting, and air sampling and analysis. Also, radiation safety assessments and quality control analysis of diagnostic radiology equipment; radiation safety assessment of x-ray defraction units, commercial and research microwave units.

Responsible for the University's low-level radioactive waste disposal program, including collection, classification, packaging and shipment of wastes. supervisor of two employees.

ADDITIONAL EXPERIENCE

Research Technician
University of Utah, Department of Anatomy
Internal Irradiation Research Project
(1976 - 1977)

United States Army
2nd Lt. Fort Jackson, South Carolina
1st Lt. U.S. Army Viet Nam
(August 1970 - February 1972)

Meteorologist
Stone and Webster Engineering Co.
Boston, Massachusetts
(Summer 1969)

ADDITIONAL TRAINING

Oak Ridge Associated Universities (February - April 1981) "Health Physics and Radiation Protection" - Professional Training Programs, Manpower, Education, Research, and Training Division.

U.S. Nuclear Regulatory Commission, Radiological Emergency Response Operations. Approximate 64 hour course ending August 8, 1980.

U.S. Nuclear Regulatory Commission, Safety Aspects of Industrial Radiography. Approximate 40 hour course ending August 17, 1980.

Western Interstate Energy Board, "Workshop on Low-Level Radioactive Waste". Approximate 16 hour workshop on low-level waste and appropriate regulations ending July 16, 1980.

Bureau of Radiological Health, U.S. Department of Health, Education and Welfare, Basic Course for Investigators: Diagnostic X-Ray Surveillance. Approximate 80 hour training course ending March 14, 1980.

U.S. Nuclear Regulatory Commission, Transportation of Radioactive Materials. Approximate 40 hour training ending November 16, 1984.

U.S. Nuclear Regulatory Commission, License Inspection Procedures. Approximate 40 hour training course ending June 18, 1985.

AFFILIATIONS

Member, Health Physics Society
Member, American Meteorology Society
Member, Great Salt Lake Chapter, Health Physics Society
Associate Member, Conference of Radiation Control Program Directors, Inc.

CERTIFICATES

National Registry of Radiation Protection Technologists
Part I Completion of Certification for Certified Health Physicist

PERSONAL

Born, July 15, 1947, Reading, Pennsylvania
6'4", 250 lbs., good health
Married, two children

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: Dane L. Finerfrock Date of Hire: March 5, 1984

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree	10/74		B.S., Meteorology & Biology, U of U
Program Orientation	5/84		
Review of the UDRC Rules	5/84		
Review of the Location of the Regulatory Guides and Reference Materials	5/84		
Essentials of Inspection	6/28/85		
Essentials of Licensing	/79		no cert.
SPECIALIZED TRAINING			
Elements of Health Physics (10 wk)	4/16/81		
Elements of Nuclear Medicine			
Elements of Medical Therapy			
Elements of Industrial Radiography	/79		no cert.
Elements of Transportation	11/16/84		
Elements of Well Logging			
Elements of Pool Irradiators			
Elements of Environmental Monitoring			
Radiological Emergency Response Operations (RERO)	8/8/80		
ADVANCED TRAINING			
Advanced Health Physics			
Elements of Investigations			
OTHER TRAINING			
X-Ray Compliance	/78		no cert.
Basic Radon Control/Nonionizing/X-Ray Fees	9/18/86		
Mitigation Rad. Transp. Emerg.	4/12/88		

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Training Areas	Date Completed	Management Initials/Signature	Comments
OTHER TRAINING (cont'd)			
Reducing Radon in Structures	3/10/89		

GWYN E. GALLOWAY
UTAH DIVISION OF RADIATION CONTROL
168 NORTH 1950 WEST
SALT LAKE CITY, UTAH 84116
(801) 536-4250

EMPLOYMENT

Utah Department of Environmental Quality, Division of Radiation Control
Environmental Scientist, November 1988 - Present

Inspect X-Ray facilities, inspect radioactive material licensees, and inspect mammography facilities under the old HCFA contract and the present FDA MQSA contract. Review license requests and issue licenses for radioactive materials use and possession. Initiate enforcement actions when a violation is observed or identified. Manage the Division's licensing and x-ray databases. Research, develop, and evaluate changes to the Utah Radiation Control Rules. Evaluate process controls and radiation levels or concentrations in restricted and unrestricted areas.

Utah Department of Health, Bureau of Water Pollution Control
Environmental Scientist, May 1986 - November 1988

Gathered routine and compliance water samples from municipal, industrial, as well as natural water sources such as lakes ans streams. Performed biological and lake samples and surveys. Maintained ans serviced variety of sampling equipment. Prepared reports and letters of results to Bureau personnel, managers, clients, and EPA. Performed various computer skills such as data entry and retreival of information.

Utah Department of Health, Bureau of Radiation Control
Environmental Scientist, April 1985 - May 1986

Established and performed air monitoring for the Uranium Mill Tailings Remedial Action Project at the VITRO site. Gathered air samples using Hoffman's, Hi-Q's, and Personnel Pumps. Analyzed filters for radiological content and compared findings to BRC standards. Monitored personnel and equipment entering and exiting site for radium contamination. Participated in Department of Energy audits of the site. Mapped out area and collected soil samples to be evaluated for radiolaogical content and compared to DOE standards. Maintained various generators and air monitoring equipment. Interacted and instructed Bureau personnel, DOE personnel and various contractors of onsite industrial hygiene and radiological health practices. Informed personnel of violations and enforced compliance with rules.

EDUCATION

BACHELOR OF SCIENCE, University of Georgia,
Forest Resources/Wildlife Biology, 1981

TRAINING

Basic Course for Investigators: Diagnostic X-Ray System: US Food & Drug Administration 1990
Inspection Procedures Course: US Nuclear Regulatory Commission 1990
Five Week Health Physics & Radiation Protection Course: ORNL 1991
Medical Uses of Radionuclides: ORNL 1991
Radiological Emergency Response Operations (RERO): 1991
Screening Mammography Training Course: US Health Care Financing Administration 1992
Industrial Radiography: US Nuclear Regulatory Commission 1992
Special Topics in Health Physics: US Nuclear Regulatory Commission 1993
Exemption Test MQSA Inspection Procedures Course I: US Food & Drug Administration 1994
Transportation of Radioactive Materials: US Nuclear Regulatory Commission 1994
Licensing Practices & Procedures: US Nuclear Regulatory Commission 1995
Mitigation Radiological Transportation Emergencies Course: Westinghouse Electric Corporation, Waste Isolation Division, Waste Isolation Pilot Plant 1995
Lasers in Medicine: Conference of Radiation Control Program Directors, Inc. 1995
MQSA Inspection Procedures Course II: US Food & Drug Adminstration 1995
Health Physics Technology: US Nuclear Regulatory Commission 1996
MQSA Inspection Procedures Course III: US Food & Drug Adminstration 1996
Accelerator Radiation Therapy: Conference of Radiation Control Program Directors, Inc. 1995
MQSA Continuing Education (10 hours): Conference of Radiation Control Program Directors 1996
Safety Aspects of Well Logging: US Nuclear Regulatory Commission 1997
MQSA Continuing Education (12 hours): Conference of Radiation Control Program Directors 1998
MQSA Course IV, Final Regulations (15 hours): US Food & Drug Adminstration 1999
Teletherapy and Brachytherapy Course: US Nuclear Regulatory Commission 1999
MQSA Continuing Education (12.5 hours): Conference of Radiation Control Program Directors 2000
Inspecting for Performance: US Nuclear Regulatory Commission 2000

CERTIFICATION

Certified MQSA Mammography Inspector: US Food & Drug Administration 02/1999 - 02/2002

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: Gywn Galloway Date of Hire: August 3, 1986

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree	3/81	CW Jones	
Program Orientation	8/86	CW Jones	
Review of the UDRC Rules	8/86	CW Jones	
Review of the Location of the Regulatory Guides and Reference Materials	8/86	CW Jones	
Essentials of Inspection	9/14/90	CW Jones	
Essentials of Licensing	2/14/95	CW Jones	
SPECIALIZED TRAINING			
Elements of Health Physics (5 wk)	8/9/91	CW Jones	
Elements of Nuclear Medicine	8/16/91	CW Jones	
Elements of Medical Therapy	8/20/99	CW Jones	H-313
Elements of Industrial Radiography	4/92	CW Jones	
Elements of Transportation	12/5/94	CW Jones	
Elements of Well Logging	11/97	CW Jones	no cert.
Elements of Pool Irradiators			
Elements of Environmental Monitoring	12/93	CW Jones	Special Topics Course
Radiological Emergency Response Operations (RERO)	10/91	CW Jones	
ADVANCED TRAINING			
Advanced Health Physics	4/4/96	CW Jones	
Elements of Investigations			
OTHER TRAINING			
Mitigation Rad. Transp. Emerg.	9/19/95	CW Jones	
NRC Teletherapy / Brachytherapy	8-20-99	CW Jones	Taken as per 1998 IMPEP review comment
Inspecting for Performance	12-7-00	CW Jones	G-304

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UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Training Areas	Date Completed	Management Initials/Signature	Comments
OTHER TRAINING (cont'd)			

RESUME

Susan Giddings

Employment History:

Date	Title	Description of Duties
1968-1972	Research Assistant	Biological research using P-32 as a biological tracer in field and laboratory research University of Utah
1980-1982	Diagnostic Radiologic Technologist	Studied and worked with patients clinically: certified, 1982 University of Utah Medical Center
1982-1983	Radiation Therapist	Studied and worked with patients clinically: certified, 1983 University of Utah Medical Center
1984-1985	Radiological Science Instructor	Taught radiobiology, radiotherapeutic biology, radiation protection, anatomy/physiology, directed readings, x-ray laboratories, and radiographic positioning Weber State University
1988-1997	Health Physicist	Radioactive material licensing, and compliance Environmental monitoring and compliance IMPEP team member State of Utah, Department of Environmental Quality, Division of Radiation Control

1997-present	Health Physicist	Inspection of x-ray facilities, facility radiation barrier evaluation, compliance, database tracking of x-ray registrants, research, develop, and evaluate rule change (radioactive materials and x-ray), respond to radiological emergencies as a team member, review and comment on FDA, CRCPD policy and procedural documents or statements of proposed rule making, prepare routine correspondence and special requests for information or resolution of complaints, and speak on subject of ionizing radiation State of Utah, Department of Environmental Quality, Division of Radiation Control

NRC, DOE, FEMA, STATE COURSES AND OTHER TRAINING

Introduction to Licensing Practices and Procedures
Inspection Procedures
Medical Uses of Radionuclides Course
WIPP - Radiological Emergency Response Trainer's Course
Fundamental Course for Radiological Monitors
Fundamental Course for Radiological Response Teams
Radiological instructor Course
Five-Week Health Physics and Radiation Protection Course
Use of Nuclear Testing Equipment (Troxler)
Safety Aspects of Industrial Radiography
Nuclear Transportation Course
Radiological Emergency Response Operations Training for State and Local Government Preparedness Personnel
Gas and Oil Well Logging for Regulatory Personnel
NRC Medical Workshop
Troxler Radiation Safety Officer Course
Mitigation Radiological Transportation Emergencies Course
Integrated Materials Performance Evaluation ProgramTraining
Radiation Therapy Training: basic physics of radiation therapy, clinical oncology, dosimetry, radiotherapeutic biology, radiation protection, medical terminology, math, anatomy, physiology, nursing care and the cancer patient, death and dying, and human diseases
Diagnostic Radiological training: anatomy/physiology, medical terminology, radiobiology, radiographic positioning, fundamentals of x-ray and radium physics, math, radiation protection, radiographic imaging, patient care, and contrast media

Quality Advantage training
The Grammar Game
S.A.F.E. Plus Driver Safety Course
Preventing Sexual Harassment in Utah Sate Government

Education:

1964	Bachelor of Science, University of Oregon, Secondary Education: Biology	
1967	Masters of Science, University of Oregon, Interdisciplinary: Biology and Speech Science	
1976	University of Utah: 40 hours of non-matriculated courses: biology, computer science, math, and Spanish	
1982	University of Utah	Certified Diagnostic Radiological Technologist
1983	University of Utah	Certified Radiation Therapist
1987-1988	University of Utah	Independent Study: Human genetics, Human Ecology, Microcomputers in the Classroom, Introduction to Microcomputers, Lotus 1,2,3, Graphic/Business Forecasting, Word Processing and Database Management
1988-present	State of Utah	NRC, DOE, FEMA, State, and other training courses (see above list)

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: Susan Giddings Date of Hire: August 15, 1988

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree	/67	CW Jones	M.S., Biology & Speech Science, U of Or.
Program Orientation	8/88	CW Jones	
Review of the UDRC Rules	8/88	CW Jones	
Review of the Location of the Regulatory Guides and Reference Materials	8/88	CW Jones	
Essentials of Inspection	7/14/89	CW Jones	
Essentials of Licensing	12/30/88	CW Jones	
SPECIALIZED TRAINING			
Elements of Health Physics (5 wk)	3/9/90	CW Jones	
Elements of Nuclear Medicine	9/1/89	CW Jones	
Elements of Medical Therapy	1983	Equivalent training Certified Radiation	Technologist: University of Utah medical School Dept Radiation Oncology
Elements of Industrial Radiography	9/21/90	CW Jones	
Elements of Transportation	8/30/91	CW Jones	
Elements of Well Logging	11/8/91	CW Jones	
Elements of Pool Irradiators			
Elements of Environmental Monitoring			
Radiological Emergency Response Operations (RERO)	10/25/91	CW Jones	
ADVANCED TRAINING			
Advanced Health Physics			
Elements of Investigations			
OTHER TRAINING			
Fund. Course for Rad. Monitors	1/28/89	CW Jones	
Fundamental Course for Radiological Response Teams	4/19/89	CW Jones	

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Training Areas	Date Completed	Management Initials/Signature	Comments
OTHER TRAINING (cont'd)			
Radiological Instructor Course	4/21/89	CW Jones	
WIPP - Radiological Emergency Response Trainers Course	9/6/89	CW Jones	
Troxler Nuclear Testing Equipment	6/1/90	CW Jones	
Troxler Radiation Safety Officer	10/14/94	CW Jones	
Mitigation Rad. Transp. Emerg.	9/19/95	CW Jones	
IMPEP Inspection	/95	CW Jones	no cert.

Philip G. Griffin

3712 South 8370 West, Magna, Utah 84044 (801) 250-0274

Objective

Employment in Technical Analysis and Operations

Work Experience

Health Physicist, Utah Division of Radiation Control
Salt Lake City, Utah June 1990 to present

- Perform compliance inspections of x-ray equipment and radioactive materials use in medical, dental, veterinary, educational, and industrial facilities
- Evaluate x-ray machine performance, radioactive materials use, and facility compliance with State regulations
- Assist in the registration of facilities using x-ray equipment
- Review radioactive materials license applications and amendments for adequacy and completeness
- Prepare correspondence with x-ray facilities, radioactive materials users, regulated public, machine assemblers, and general public
- Review and critique the inspection results and correspondence other health physicists
- Coordinate activities regarding sources of non-ionizing radiation

Technician - temporary, Hercules Aerospace (SOS Temporary Services)
Magna, Utah November 1989 to June 1990

- Assist engineers and technicians implement aging and testing of rocket propellant
- Write technical procedures and instructions for Aging group
- Assist with inventory of hazardous materials in plant facilities

Physics Grader, Brigham Young University
Provo, Utah September 1987 to December 1987

- Evaluate exams and quizzes in electromagnetism/electronics
- Assist professor in assigning grades

Other employment includes: security guard, physics tutor, custodian, construction worker, package assembler, dormitory assistant, and bindery worker

Education

Bachelor of Science - Physics, Brigham Young University
Provo, Utah April 1988

Courses Emphasized

- Electronics
- Optics
- Mechanics
- Solid state physics
- Thermodynamics
- Electromagnetism

Technical & Other Skills

- **Computer Languages**: BASIC and PASCAL
- **Computer Aided Design**: AutoCAD
- **Microcomputers**: Macintosh, PC, and Wang with experience in WordPerfect, MS Word, Excel, and database operations

- **Language:** Read, write, and speak fluent Spanish

Training Received

- First Responders Radiological Transportation Emergencies Course, Ogden, UT, May 29, 1991
- National Training Institute's tanning training program, Reno NV, July 1, 1993
- Five-Week Health Physics and Radiation Protection Course, ORAU, Oak Ridge, TN, July 17 - August 20, 1993
- Radiological Emergency Response Operations Course, Mercury, NV, January 30 - February 5, 1994
- IS-301 Radiological Emergency Response, Emergency Management Institute, FEMA, January 7, 1994
- Committee on Nationwide Evaluation of X-Ray Trends 1994 Chest Study Training, Las Vegas, NV, February 23-24, 1994
- Medical Uses of Radionuclide Course, ORAU, Oak Ridge, TN, March 13 - 17, 1995
- Mitigation Radiological Transportation Emergencies Course, WIPP, Salt Lake City, UT, September 19, 1995
- Inspection Procedures Course, NRC, Chattanooga, TN, September 25 - 29, 1995
- Safety Aspects of Well Logging, Schlumberger Wireline Training Center, Houston, TX, October 30 - November 3, 1995
- Transportation of Radioactive Materials Course, Chem Nuclear Systems Inc., Columbia, SC, April 29 - May 3, 1996
- Licensing Practices and Procedures Course, NRC, Chattanooga, TN, June 3 - 7, 1996
- Integrated Emergency Management Course: Hazardous Materials, Emergency Management Institute, FEMA, Emmitsburg, MD, August 12 - 16, 1996
- ANSI-N322A Calibration Workshop for Portable Survey Instruments, The Calibration Metrology Group, Boulder, CO, August 10 - 14, 1998
- Safety Aspects of Industrial Radiography, NRC, Chattanooga, TN, May 12, 2000 (challenged course by proctored examination in Salt Lake City, UT)
- Training Course for the Use of Nuclear Testing Equipment, Nuclear Testing Services, Salt Lake City, UT, August 23, 2001

Achievements and Interests

- Health Physics Society, plenary member
- National Honor Society, chapter vice president
- Presidential scholarship to Brigham Young University
- Acting and vocal performance, solos and choral music
- Member of the Salt Lake Mormon Tabernacle Choir

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: Philip G. Griffin Date of Hire: June 25, 1990

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree	4/88	CW Jones	B.S, Physics, BYU
Program Orientation	6/90	CW Jones	
Review of the UDRC Rules	7/90	CW Jones	
Review of the Location of the Regulatory Guides and Reference Materials	7/90	CW Jones	
Essentials of Inspection	~~9/29/95~~ 11-15-95	CW Jones	
Essentials of Licensing	6/7/96	CW Jones	
SPECIALIZED TRAINING			
Elements of Health Physics (5 wk)	8/20/93	CW Jones	
Elements of Nuclear Medicine	~~2/17/95~~ ~~3-26-95~~ 6	CW Jones	
Elements of Medical Therapy			
Elements of Industrial Radiography	5-12-00	CW Jones	Challenged exam
Elements of Transportation	~~5/3/96~~ 6-10-96	CW Jones	
Elements of Well Logging	11~~/3~~/95 23	CW Jones	
Elements of Pool Irradiators			
Elements of Environmental Monitoring			
Radiological Emergency Response Operations (RERO)	2/5/94	CW Jones	
ADVANCED TRAINING			
Advanced Health Physics			
Elements of an Inspection			
OTHER TRAINING			
1st Respondrs Rad. Transp. Emerg.	5/29/91	CW Jones	
Tanning Training	7/1/93	CW Jones	
ISO-301 Rad. Emergncy Response	1/7/94	CW Jones	

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Training Areas	Date Completed	Management Initials/Signature	Comments
OTHER TRAINING (cont'd)			
NEXT 1994 Chest	2/24/94	CW Jones	No cert.
Mitigation Rad. Transp. Emerg.	9/19/95	CW Jones	
Integrated Emergency Management: Haz. Mat.	8/16/96	CW Jones	
Calibration Workshop for Portable Survey Instruments	8/14/98	CW Jones	
Nuclear Testing Services Training Course (Portable Gauges)	8/23/01	CW Jones	

BRIAN HAMOS

EDUCATION

B.S., Geology, University of Iowa, 1985
Minor-Mathematics

COURSEWORK

Engineering Calculus, Physical Geography, Physical Geology, Structural Geology, Mineralogy, Principles of Groundwater Hydrology, Petrology, Paleontology, Remote Sensing, Statistics, Chemistry, and Physics

SKILL AND EXPERIENCE SUMMARY

Eleven years of experience in the investigation, remediation, and regulatory oversight of hazardous waste sites. Experienced in all aspects of environmental projects. Management experience includes cost proposal preparation, contract negotiation, budget management, project scheduling, subcontractor selection and management, subcontract preparation, and developing and maintaining positive client relationships. Technical experience includes designing and conducting contaminated soil and groundwater investigations; soil and groundwater sampling; groundwater monitoring well design, placement, and installation; supervision of drilling programs; construction management of remediation projects; and technical report preparation. Supervisory experience includes performing personnel performance reviews, interviewing prospective employees, and coordinating support staff during the production of technical documents. Regulatory oversight experience includes evaluating the impact site operations have on the hydrogeologic conditions at a low level radioactive waste disposal facility. Site experience includes radioactive waste disposal facilities, petroleum storage facilities, chemical manufacturing facilities, landfills, and chemical and explosive warfare materiel contaminated sites.

WORK HISTORY

Hydrogeologist. State of Utah Department of Environmental Quality, Division of Radiation Control. Salt Lake City, UT. November 1999 – Present.

Responsible for evaluating hydrologic aspects of disposal of radioactive wastes in a low level radioactive waste disposal facility. Regulate activities performed under Groundwater Quality Discharge Permits, perform routine inspections of facilities impacting ground water issues, interpret water quality data, review engineering plans for appropriateness and safety in satisfying ground water protection standards and rules, and evaluate license applications. Provide hydrologic technical support to Division staff, government agencies, the public and regulated industry. Conduct radioactive material licensing and compliance activities according to the Utah Radiation Control Rules, EPA and State Ground Water Regulations.

Hydrogeologist. Montgomery Watson Consulting Engineers. Des Moines, IA/Salt Lake City, UT. September 1991 – October 1999.

Project Manager

Directed the characterization of an 850-acre site contaminated with unexploded ordnance at a former military firing range. Responsible for preparing the project cost proposal, negotiating the contract, and managing project costs. Coordinated approximately 20 geophysical subcontractor technical staff during site characterization under an accelerated regulatory schedule. Supervised the successful development of a custom software program designed to identify ordnance within geophysical data. Managed database personnel in the collection and storage of all data in a geographical information system (GIS). Ongoing activities include coordinating with an explosives remediation contractor during the removal of ordnance identified during geophysical mapping of the site.

Maintained overall responsibility for the characterization and remediation of a site contaminated with petroleum hydrocarbons from leaking underground storage tanks. Responsible for preparing the project cost proposal, negotiating the contract, managing the budget, staffing project activities, and responding to regulatory comments. Conducted meetings, maintained regular client contact, prepared monthly financial reports to track project costs, scheduled subcontractors, and coordinated engineering support for the remedial design. Project activities included site records research, tank tightness testing, work plan preparation, contaminated soil and groundwater investigation, and report preparation. Successful site characterization led to remedial design phase, which employed a combination of soil vapor extraction and enhanced bioremediation to achieve regulatory cleanup levels in soil and groundwater. Successfully met regulatory deadlines and satisfied regulatory requirements.

Construction Manager

Performed construction management services during the remediation of several burial pits where chemical warfare materiel had been disposed. Remediation consisted of excavation, recovery, and removal of intact and residual chemical warfare agents by the U.S. Army Technical Escort Unit. Responsible for maintaining the project schedule, ensuring project work plans were followed by U.S. Army personnel, directing U.S. Army soil sampling activities, documenting project activities in daily quality control reports, tracking the construction budget, and preparing the project close-out report. Satisfied regulatory oversight provided by government agencies including the U.S. Army Corps of Engineers, Utah Department of Environmental Quality, and the Environmental Protection Agency (EPA).

Project Hydrogeologist

Responsible for designing and directing field investigations, preparing work plans, supervising field activities, and preparing site characterization reports in support of the characterization and

remediation of a variety of sites under the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Duties included overseeing health and safety procedures, interpreting laboratory analytical data, evaluating water quality, coordinating regulatory agency review of documents, determining proper characterization and disposal of wastes generated during field activities, and interpreting and satisfying state and federal rules and regulations.

Projects have included the investigation of soil and groundwater contamination resulting from operations at military installations, industrial manufacturing facilities, fuel storage and distribution facilities, transformer storage yards, agricultural chemical sites, Formerly Used Defense Sites (FUDS), and landfills. Contaminants of concern have included petroleum hydrocarbons, pesticides, metals, PCBs, solvents, and chemical warfare agents.

Environmental Scientist

Performed office and field tasks in support of numerous environmental investigation and remediation projects. Field tasks consisted of defining soil and groundwater contaminant plumes using various subsurface investigation techniques including hollow-stem auger drilling, dual-wall reverse circulation drilling, cone penetrometer and geoprobe sampling techniques, and geophysical surveys. Responsible for collecting soil and groundwater samples, geologic logging of drill cuttings and soil samples, sediment and surface water sampling of streams and wetlands, groundwater monitoring well installation and development, and aquifer testing. Office responsibilities included summarizing and interpreting soil and groundwater analytical results; assessing ground water quality, preparing data tables, site maps, and geologic cross sections; and writing field sampling plans, quality assurance/quality control plans, site investigation work plans, and site investigation reports.

Staff Geologist. Enecotech, Inc. Denver, CO. September 1990 - September 1991.

Participated in all aspects of Phase I (Property Audit) and Phase II (Hydrogeological) environmental assessments. Responsibilities included the assessment and characterization of petroleum contamination from underground storage facilities. Activities included placement and installation of boreholes and monitoring wells, operation of field sampling equipment and air monitoring instruments, soil and groundwater sample collection, UST removal oversight, conducting soil vapor surveys, performing record searches, and technical report preparation.

Engineering Aide. City of Arvada. Arvada, CO. November 1985 - September 1990.

Member of survey crew on public works improvement projects. Responsibilities included gathering field data utilizing a variety of survey instruments, note keeping, interpreting construction plans, drawings and specifications, performing mathematical calculations, field layout of project for subcontractors, and project inspection during the construction phase. Developed the skills to communicate effectively both orally and in writing. Interacted with the

public and local government officials during construction projects.

TRAINING/CERTIFICATIONS

State of Utah Groundwater and Soil Sampler Certificate #GS0602
OSHA 40 Hour Hazardous Waste Site Health and Safety Training
First Aid/CPR Certified
Proficient in the use of personal computers, including database, spreadsheet, and word processing software

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: Brian Hamos Date of Hire: November1, 1999

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree	1985		~~Univ. of Iowa, B.S.~~ Geology
Program Orientation	11-99		
Review of the UDRC Rules	~~11-99~~		
Review of the Location of the Regulatory Guides and Reference Materials	11-99		
Essentials of Inspection			
Essentials of Licensing			
SPECIALIZED TRAINING			
Elements of Health Physics (1 wk)	7/2001	DF	
Elements of Nuclear Medicine			
Elements of Medical Therapy			
Elements of Industrial Radiography			
Elements of Transportation	7/2001	DF	
Elements of Well Logging			
Elements of Pool Irradiators			
Elements of Environmental Monitoring			
Radiological Emergency Response Operations (RERO)			
ADVANCED TRAINING			
Advanced Health Physics			
Elements of Investigations			
OTHER TRAINING			
Intro. to GW Modeling	2-2000		
Fundamentals of GW Geochemistry	10-2000		
Geochem. of Metals NGWA	3-2001		

ROBERT F. HERBERT
Hydrogeologist
3068 East 3960 South
Salt Lake City, Utah 84124
801-278-5314

EXPERIENCE

7/97-Present **UTAH DEQ - DIVISION OF RADIATION CONTROL** - Salt Lake City, UT
Hydrogeologist (Environmental Scientist III)

As Project Manager, provides State oversight for Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I and Title II sites, naturally-occurring radioactive materials (NORM) tailings waste sites, and low-level radioactive disposal (LLRD) sites in Utah. Reviews and evaluates hydrologic related issues including groundwater well monitoring, saturated and unsaturated flow modeling, radioactive contaminant transport modeling, and infiltration modeling. Reviews technical information submitted to the DRC for new or existing potential sources of radioactive contamination in the surface and ground waters of the State and prepare appropriate responses to the submission. Recommends, develops, and implements the adoption of rules, standards, or criteria as appropriate, related to the protection of the public health and the environment from the effects of radioactivity in surface and ground water from licensed or un-licensed activities using Titles 10 and 40 CFR and State Groundwater Regulations. Coordinates the DRCs activities relating to surface and ground water protection with other local, state, or federal agencies having similar responsibilities. Review engineering plans for radioactive waste disposal facilities and radioactive waste/spills remediation projects as to their appropriateness and safey in meeting groundwater protection criteria and rules. Review and evaluate ground water quality and other compliance monitoring data from licensees to determine technical adequacy, completeness, and compliance with Division/Department standards or requirements. Participates in public and professional meetings, seminars, training, and workshops. Conducts studies, prepares technical reports, and reviews technical publications.

3/97-7/97 **UTAH DEQ - DIVISION OF ENVIRONMENTAL RESPONSE AND REMEDIATION - CERCLA Site Assessment** - Salt Lake City, UT
Environmental Scientist I

Project Manager for Preliminary Assessment (PA) work and assistant on Site Inspection projects for the Utah Superfund program. Coordinated project activities by setting goals, objectives, and schedules with relevant parties including EPA and in-house staff to elucidate project objectives. Prepared for and attended necessary meetings to keep managment apprised of project activities and provided recommendations, as necessary. Conducted PA site visits, file reviews, and summarized geologic, hydrogeologic, climatologic, and soil conditions relavent to PA sites prior to preparing PA Reports. Actively assisted in identifying and developing information for the Site Discovery Program and submitting that information to EPA for placement on the CERCLIS List. Provided assistance to other staff members in researching information on sites which may pose risks to human health and the environment. Coordinated facility needs and local participant enrollment in CERCLA-related training.

5/95-3/97 **IHI ENVIRONMENTAL** - Salt Lake City, UT
Senior Hydrogeologist/Project Manager

Office duties include: preparing proposals and cost estimates for CERCLA, RCRA, UST, and LUST investigations and remediations; evaluating remedial alternatives and implementing the most technically efficient and cost-effective remedial actions such as free-product recovery, in-situ bioventing, soil vapor extraction, and associated groundwater and soil-gas monitoring; reviewing subsurface investigation reports and remedial action plans for technical content and potential client liability associated with property transfers/development; preparing subcontract agreements for environmental investigations; preparing work plans, subsurface investigation reports, corrective action plans, monitoring reports, and closure reports for CERCLA, RCRA, and LUST investigations and remediations; conducting qualitative risk assessments and preparing risk assessment reports; managing staff geologists and technicians; tracking and managing project budgets; interacting with clients and preparing project invoices. **Field duties include:** delineating the nature and extent of soil and groundwater contamination at CERCLA, RCRA, and LUST sites; conducting shut-down tests for in-situ bioventing and soil vapor extraction remedial systems to evaluate the progress of remediation; guiding mine tailings removal actions by XRF soil screening and collecting confirmatory samples prior to reclamation activities; providing third party technical oversight during subsurface investigations and remediations.

1/92-5/95 **MONTGOMERY WATSON** - Industrial/Hazardous Waste Services
New Orleans, LA and Salt Lake City, UT
Hydrogeologist/UST Project Manager.

Office duties included: preparing and negotiating proposals for Installation Restoration Program UST and LUST investigations and corrective actions; preparing work plans, subsurface investigation reports, corrective action plans, decision documents, and monitoring reports for LUST sites; preparing CERCLA preliminary assessment work plans and reports; conducting SESOIL modeling at LUST sites to estimate the impact of BTEXN to groundwater; conducting FLOWPATH groundwater modeling to optimize the number, position, and pumping rates of extraction wells for groundwater remediations; interacting with DOD clients and preparing monthly delivery order invoices and reports. **Field duties included:** supervising drilling operations, soil sampling, and monitoring well installations for LUST subsurface investigations, RCRA facility investigations, and CERCLA remedial investigations; installing soil-gas probes, air injection wells, and vapor extraction wells for in-situ remediation of petroleum hydrocarbon-contaminated soils; conducting soil respiration tests, radius of influence tests, and pilot bioventing tests to assess the feasibility of in-situ bioventing at petroleum-contaminated sites.

8/91-12/91 **UNIVERSITY OF NEW ORLEANS** - Department of Geology and Geophysics
Masters Candidate - Graduate Thesis Research in Environmental Geology
Thesis: Geostatistical Analysis of Percent-Sand Data to Estimate Vertical Permeability for a Hazardous Waste Deep-Well Injection Confining Zone

1/91-8/91 **LOUISIA[redacted] GEOLOGICAL SURVEY** - Water [redacted]ources Section, Baton Rouge, LA
Research Geologist III
Conducted geological review of Class I underground injection wells for the Louisiana Department of Environmental Quality (DEQ). Examined structural and stratigraphic relationships between subsurface waste disposal zones and Underground Sources of Drinking Water to determine the geologic suitability of injection sites. Prepared detailed reports for DEQ describing and illustrating site-specific subsurface geology, hydrogeology, and migration potential of injected wastes.

8/90-1/91 **UNIVERSITY OF NEW ORLEANS** - Department of Geology and Geophysics
Graduate Teaching Assistant - Historical Geology and Invertebrate Paleontology
Provided laboratory lectures about the evolutionary history of the earth including physical changes and an introduction to the fossil record of life through time. Provided laboratory instruction to apply the principles and methods of interpreting earth history including geologic maps and cross sections.

1/85-8/90 **CONSOLIDATED NATURAL GAS PRODUCING COMPANY**- New Orleans, LA
Exploration Geologist
Conducted petroleum exploration and prospect generation by correlating well logs and interpreting geophysical record sections; preparing structure contour, net sand, and paleobathymetric maps; constructing geologic cross sections; delineating field production; calculating reserves; and conducting lease histories of prospective acreage.

Set up a Paradox database for all productive fields in offshore Louisiana for calling up specific elements of interest on any block, field, area, or trend for exploration purposes. Elements included cumulative production, biostratigraphic pay zones, perforated intervals by true vertical depth, seismic characteristics, trapping mechanisms, key wells, key seismic lines, composite type logs, depositional environments, formation temperatures, mudweights, dates of first production, discovery dates, field position within regional trends, and references. Generated a regional working production map showing all fields with production summaries.

2/84-1/85 **DATA LOG, INC.** - Reserve, LA
Well-Site Geologist
Continuously monitored and analyzed formation cuttings and drilling fluid to detect the presence of hydrocarbons during petroleum exploration well drilling. Constructed a stratigraphic profiles from geologic interpretation of the drilled section by analysis of drilling parameters including penetration rate, porosity, lithology, shale density, and hydrocarbon detection.

EDUCATION

University of New Orleans - New Orleans, LA
M.S. - Geology/Hydrogeology, December 1991

Louisiana State University - Baton Rouge, LA
B.S. - Professional Geology, May 1983

COMPUTER SKILLS

Paradox, Microsoft Word and Excel; Wordperfect; Lotus; SESOIL; HELP; FLOWPATH.

REGISTRATIONS/CERTIFICATIONS/MEMBERSHIPS

Registered Professional Geologist in the State of Tennessee
40-Hour Hazardous Waste Operations and Emergency Response Training
Certified UST Consultant in the State of Utah
Certified Groundwater and Soil Sampler in the State of Utah
National Ground Water Association

SHORT COURSES

Understanding the Migration, Assessment, and Remediation of Non-Aqueous Phase Liquids; LNAPLs and DNAPLs (NGWA)
Treatment Technology for Contaminated Soils and Groundwater (NGWA)
Environmental Fate of Hydrocarbons in Soils and Groundwater (AEHS)
Risk-Based Corrective Action Workshop (AEHS)
Introductory Preliminary Assessment Training (EPA Superfund)
Introductory Site Inspection Training (EPA Superfund)
Treatment Technologies for Superfund (EPA Superfund)

AWARDS/BONUSES

1996 IHI Environmental Performance Bonus
1994 Montgomery Watson Outstanding Performance Award
1992, 1993, and 1994 Montgomery Watson Performance Bonuses
1991 University of New Orleans Graduate Teaching Assistantship

KEY PROJECTS

Offshore Louisiana Production Synopsis Project
Set up a Paradox database for all productive fields in offshore Louisiana for calling up specific elements of interest on any block, field, area, or trend for exploration purposes. Elements included cumulative production, biostratigraphic pay zones, perforated intervals by true vertical depth, seismic characteristics, trapping mechanisms, key wells, key seismic lines, composite type logs, depositional environments, formation temperatures, mudweights, dates of first production, discovery dates, field position within regional trends, and references. Generated a regional working production map showing all fields with production summaries.

Hill Air Force Base UST Investigations and Corrective Actions
Project hydrogeologist for a 25-site UST subsurface investigation and corrective action project. Identified 12 LUST sites, characterized the horizontal and vertical extent of contamination, prepared subsurface investigation reports and corrective action plans, and implemented remedial action after receiving regulatory approval. Corrective actions included conducting in-situ bioventing treatability studies at eleven hydrocarbon-contaminated sites and soil vapor extraction at one Stoddard solvent site. Initial soil respiration and radius of influence tests were conducted to evaluate bioventing feasibility and six-month shut-down respiration tests were conducted to monitor the progress of biodegradation.

Hill Air Force Base Light Non-Aqueous Phase Liquid Site Investigation and Remediation
As Project Manager and Hydrogeologist, identified and delineated an LNAPL plume floating on the water table at 110 feet below ground surface by installing eleven 4-inch diameter product recovery/groundwater monitoring wells. After preparing a subsurface investigation report, evaluated the effectiveness of using skimmer pumps for LNAPL recovery. Approximately 15,000 gallons of LNAPL were removed from the water table in 15 months. Based on the project success, the skimmer pump system was upgraded for a full-scale long-term recovery operation.

Tooele Army Depot RCRA Facility Investigation
Hydrogeologist for a 12-week field investigation for the Phase I RCRA Facility Investigation (RFI). This RFI involved collecting approximately 800 soil, sediment, and groundwater samples at 17 Solid Waste Management Units. Duties included sampling surface soils and surface waters, sampling deep soil borings and groundwater monitoring wells. To characterize the open burning and open detonation (OB/OD) areas of the Depot, over 100 test pits were excavated, logged, and surveyed.

Hill Air Force Base North Area Preliminary Assessment
Primary investigator and author of a CERCLA Preliminary Assessment (PA) Report for the North Area of Hill Air Force Base which comprises approximately 4,400 acres or two-thirds of the Base's total area. The objective of the PA was to identify buildings, facilities, or areas that may have had releases of hazardous substances to the environment. After preparing the PA work plan, conducted personal interviews and extensive records searches of Base files, assimilated all information, and prepared the PA report. Out of approximately 700 facilities in the North Area, 167 were recommended for site inspections to determine if additional investigations and sampling were warranted. The North Area PA study area has become CERCLA Operable Unit 9 of Hill Air Force Base.

Utah Transit Authority LUST Investigation and Remediation
Project manager for the UTA Meadowbrook South Tank Farm. After preparing the proposal and cost estimate, delineated the nature and extent of contamination, prepared a Corrective Action Plan that was approved by DERR, and implemented free-product recovery from the water table and in-situ bioventing of petroleum contaminated unsaturated soils. Monitoring activities include semi-annual groundwater sampling to monitor the progress of intrinsic bioremediation of contaminated groundwater and semi-annual bioventing shut-down respiration tests to monitor the progress of biodegradation of contaminated soils.

Hill Air Force Base Operable Unit 3 Remedial Investigation
Hydrogeologist for the Berman Pond site characterization for the Operable Unit 3 RI. Berman Pond was a waste disposal pond used to dump spent solvents, fuels, and metal plating wastes until the late 1970s when it was backfilled and covered. Duties included drilling and continuously sampling soil borings to the sludge base of the pond, installing conductor casing to seal off the pond bottom, and drilling and sampling from below the pond bottom to groundwater to assess the extent of contaminant leaching from the pond. Installed two soil vapor extraction wells, five groundwater monitoring wells, and seven piezometers to monitor hydrogeologic parameters during groundwater pumping and recovery tests of the water table.

Hill Air Force Base Operable Units 1 and 7 Remedial Investigations
Hydrogeologist for the site characterizations for OUs 1 and 7. For OU 1, installed eleven groundwater monitoring wells in the shallow on-Base and off-Base aquifers, collected soil samples for chemical analyses, and performed field grain size analyses to select the proper filter sand pack and screen size for each well completion. At OU 7, sampled soil borings, and installed a 130-foot groundwater monitoring well inside an aircraft maintenance hanger to delineate the vertical extent of heavy metals and PCBs.

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: Robert F. Herbert Date of Hire: March 3, 1997

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree	12/91		M.S., Geology/ Hydrogeology, U of N.O.
Program Orientation	7/97		
Review of the UDRC Rules	7/97		
Review of the Location of the Regulatory Guides and Reference Materials	7/97		
Essentials of Inspection			
Essentials of Licensing			
SPECIALIZED TRAINING			
Elements of Health Physics (5 wk)			
Elements of Nuclear Medicine			
Elements of Medical Therapy			
Elements of Industrial Radiography			
Elements of Transportation			
Elements of Well Logging	7/2001	DF	
Elements of Pool Irradiators			
Elements of Environmental Monitoring			
Radiological Emergency Response Operations (RERO)			
ADVANCED TRAINING			
Advanced Health Physics			
Elements of Investigations			
OTHER TRAINING			
Introductory Site Inspection	5/9/97		
Treatment Techn. for Superfund	6/13/97		
Radiation Safety at Superfund Sites	2/6/98		

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Training Areas	Date Completed	Management Initials/Signature	Comments
OTHER TRAINING (cont'd)			
Preliminary Assessment	5/7/97		
Geochemistry of Metals NGWA	3-2001		

JOHN DOUGLAS HULTQUIST

Personal Information

Address: 2505 East 2860 South
Salt Lake City, Utah 84109
Birth Date: 12/31/59

Employment History

April 1985 - Present
Utah Department of Health
Division of Environmental Health
Bureau of Radiation Control
288 N. 1460 W./P.O. Box 16690
Salt Lake City, Utah 84116-0690
(801) 538-6734

Coordinate and implement the health, safety and monitoring program during remedial action at the Vitro UMTRA site in Salt Lake City from April 1985 to August 1988, which included routine data collection, inspections, evaluating data against standards, care and maintenance of sampling equipment, correspondence, and enforcement of regulations applicable to the UMTRA Project.

From August 1988 to present my responsibilities are license compliance inspections of a low level waste disposal site, material license audit team, environmental monitoring program, instrumentation calibration, and a member of the Bureau's emergency response program.

May 1981 - August 1983
U.S. Army Corps of Engineers
1160 Lake Mendocino Drive
Ukiah, California 95482
(707) 462-7581

Seasonal employment during the summers of 1981, 1982, and 1983 as Park Technician. Duties consisted of maintaining daily camp register, supervision of co-workers, provided information to travelers and assisted the Park Ranger as needed.

Education

1980-1984
University of Tennessee at Chattanooga
Bachelor of Science
Environmental Science/Biology

Training

Environmental Protection Agency's 2 day course in Basic Risks Assessment and Decision Making.

References as Requested.

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: John D. Hultquist Date of Hire: August 8, 1988

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree	/84		B.S , Environmental Science/Biology, UTC
Program Orientation	8/88		
Review of the UDRC Rules	8/88		
Review of the Location of the Regulatory Guides and Reference Materials	8/88		
Essentials of Inspection	8/3/90		
Essentials of Licensing	6/18/93		
SPECIALIZED TRAINING			
Elements of Health Physics (5 wk)	8/11/89		
Elements of Nuclear Medicine			
Elements of Medical Therapy			
Elements of Industrial Radiography			
Elements of Transportation	3/92		no cert.
Elements of Well Logging			
Elements of Pool Irradiators			
Elements of Environmental Monitoring	6/19/95		
Radiological Emergency Response Operations (RERO)	10/91		no cert.
ADVANCED TRAINING			
Advanced Health Physics			
Elements of Investigations			
OTHER TRAINING			
Radon Mitigation (3 day)	6/89		no cert.
1st Responders Rad. Trans. Emerg.	8/29/89		
Radiation Protection Engineering	2/1/91		

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Training Areas	Date Completed	Management Initials/Signature	Comments
OTHER TRAINING (cont'd)			
Radon Mitigation (5 day)	11/92		no cert.
Mitigation Rad. Transp. Emerg.	9/19/95		
Multi-Agency Radiation Survey and Site Investigation Manual	7/28/98		
Resp Protection Training prog (Train the Trainer)	7-31-01	DF	North State Rad. Sic,

BOYD M. IMAI

443 East Vine Street
Murray, Utah 84107

Telephone: (801) 270-5370 (home)
(801) 356-0038 (work)

E-mail: Tritiumx@msn.com (home)
bimai@deq.state.ut.us (work)

EMPLOYMENT EXPERIENCE

August 2001- Present — STATE OF UTAH
Department of Environmental Quality, Division of Radiation Control
168 North 1950 West
Salt Lake City, Utah 84114-4850

As an Environmental Scientist, write radioactive materials licenses by analyzing the applicants submissions and comparing them with rules, standards, and other regulatory criteria; conduct radioactive material license inspections at a low-level radioactive waste disposal facility; compose inspection reports; and prepare enforcement actions.

August 2000 - July 2001 — INTERNATIONAL TECHNOLOGY, CORP.
Las Vegas, Nevada

As a Waste Management Lead and the Nevada Test Site Waste Acceptance Criteria (NTSWAC) Coordinator, managed and direct low-level radioactive and mixed waste activities. Responsibilities include characterizing, packaging, and transporting waste for disposal; developing, implementing, and maintaining operating procedures; assuring compliance with waste certification and acceptance criteria; supporting project operations generating radioactive wastes. Security Clearance: Q

Jan. 1996 - August 2000 — BECHTEL NEVADA
Las Vegas, NV

As a Scientist, served as the company Waste Generator Program task leader with a $750,000 operating budget and as the Transuranic Waste Transportation Certification Official; prepared low-level radioactive and mixed wastes for disposal; and supported Department of Energy Nevada Operations, Waste Generator Program.

Sept. 1982 - Dec. 1995 — REYNOLDS ELECTRICAL & ENGINEERING CO., INC. (REECo)
Las Vegas, NV

-Radioactive Waste Management Specialist III & IV	June 1993 - Dec. 1995
-Health Physicist II	Sept. 1989 - June 1993
-Radiation Safety Monitor	Sept. 1982 - Sept. 1989

July 1979 - April 1982 — VALLEY HOSPITAL MEDICAL CENTER, Las Vegas, Nevada

-Administrative Assistant	Aug. 1980 - Apr. 1982
-Administrative Resident	July 1979 - July 1980

?. 1977 - y 1979	ARIZONA STATE UNIVERSITY, Tempe, Arizona Department of Quantitative Systems -Graduate Assistant
June 1977 - Aug. 1977	BUREAU OF LAND MANAGEMENT & COLLEGE OF E. UTAH, Price, Utah Youth Conservation Corps -Group Leader/Counselor
Sept. 1975 - June 1977	COLLEGE OF EASTERN UTAH, Price, Utah Learning Resource Center -Tutor Coordinator
Sept. 1972 - March 1974	UNIVERSITY OF UTAH, Salt Lake City, Utah Department of Physics -Physics Intern

EDUCATION

Arizona State University, Tempe, Arizona
- Master of Health Services Administration - 1980
- Graduate Program in Business Admin. - 1977-1978

University of Utah, Salt Lake City, Utah
- Graduate Program in Education - 1974-1975
- Bachelor of Science in Mathematics - 1974

College of Eastern Utah, Price, Utah
- Associate Degree - 1971

Carbon High School, Price, Utah
- Graduate - 1969

MEMBERSHIPS

Health Physics Society
National Registry of Radiation Protection Technologists

RELEVANT TRAINING

Department of Transportation Hazardous Materials Transportation
Resource Conservation and Recovery Act Hazardous Wastes
Occupational Safety and Health Administration Hazardous Waste Site Worker
Radiation Worker

CURRICULUM VITAE

Craig W. Jones

Education

University of Utah, Salt Lake City, Utah: B.S., Biology, 1976, Cum Laude.
University of Utah, Salt Lake City, Utah: M.S.P.H., Industrial Hygiene, 1987

Certification

Radiation Protection Technologist, 1979

Experience

April 1988 to Present - Division of Radiation Control, Utah Department of Environmental Quality, Environmental Manager I. I have administrative responsibilities for eight Health Physicists. My duties include determining staff assignments, conducting performance evaluations, interviewing and hiring, project budgeting, and progress evaluations. I also prepare and review a variety of technical reports. Technical duties include directing an Agreement State program for licensing and inspection of various users of radioactive material, directing statewide registration and inspection of x-ray machines, and participating on the agency's radiological emergency response team.

September 1984 to April 1988 - Bureau of Radiation Control, Division of Environmental Health, Utah Department of Health, Environmental Health Scientist III (Health Physicist). I provided technical support for the control of radioactive materials in an Agreement State program. Specific duties and responsibilities included reviewing and preparing a license authorizing the possession and use of radioactive material, examination or observation of a licensee to determine compliance with the appropriate regulations, and enforcement of regulations to protect the public and the environment from hazards associated with radiation. I also served as a team member for radiological emergency response.

January 1983 to September 1984 - Department of Pharmacology, Radiobiology Division, University of Utah, Senior Research Specialist. I conceived, designed and conducted experiments to evaluate decorporation therapy for actinide and heavy metals poisoning in animal models and to test the application of radioactive tracers in biology and medicine. I supervised the work of an animal husbandry technician and several medical students conducting research projects. My experience also included the interviewing and hiring of technical support staff. I was assistant Radiation Safety Officer for the Radiobiology Division and was designated as the Department of Energy, Chicago Operations Office, contact for management of the radioactive materials inventories and waste disposal.

August 1977 to January 1983 - Department of Anatomy, Radiobiology Laboratory, University of Utah, Research Specialist. I was actively involved in radiobiological research work. The primary aim of this research was to study the distribution and toxicity of alpha-emitting, bone-seeking, internally deposited radionuclides in suitable animal models. I participated in the design of specific experiments, collected and analyzed data, and prepared reports for principal investigators. My technical experience also included the operation of a total-body counter for gamma-ray spectrometric analysis of humans, research animals, and various samples.

May 1975 to August 1977 - Radiological Health Department, University of Utah, Radioactive Waste Disposal Technician. It was my duty to manage all aspects of the University of Utah low-level radioactive waste disposal program that included collection, packaging and shipment of radioactive waste to an appropriate disposal facility. It was also my duty to survey laboratories for radiation protection. If there were a radiation accident, they called upon me to advise and aid in decontamination procedures.

Activities

Trained member of the Utah radiological emergency response team. Secretary for the Great Salt Lake Chapter of the Health Physics Society, 1982 to 1984; Executive Council member 1979 through 1981.

Invited speaker at the Utah Conference on Safety & Industrial Hygiene, October 4-5, 2000. Guest lecturer for the University of Utah Department of Family and Preventive Medicine since 1988. Guest lecturer for the University of Utah Department of Health Promotion and Education since 1993.

Membership in Societies

Health Physics Society, Plenary Member since 1978.
Radiation Research Society, Member, 1983 to 1988.
American Conference of Governmental Industrial Hygienists, Member, 1987 to 1991.
Great Salt Lake Chapter of the Health Physics Society, member since 1978.

Publications

Articles - 19, Abstracts - 7, Technical Reports -14, Available upon request.

LOREN B. MORTON

4156 Charles Drive
West Valley City, Utah 84120
(801) 969-8647 (home)

CAREER OBJECTIVE — A project hydrogeologist in environmental protection/restoration and resource conservation, utilizing a strong background in hydrogeology and regulatory application.

EXPERIENCE

1994 to present — **UTAH DIVISION OF RADIATION CONTROL**, Salt Lake City, Utah

Senior Hydrogeologist (September, 1994 to present)
Report to Environmental Monitoring and Waste Disposal Manager. Evaluate hydrogeologic reports, engineering plans and specifications, ground water monitoring plans, and other technical reports. Review, evaluate, and conduct infiltration, groundwater flow and contaminant transport models. In-house consulting for other staff. Draft ground water discharge permits, evaluate groundwater quality and compliance monitoring data, conduct inspections and enforcement. Major Projects: low-level radioactive waste (LLRW) landfills, uranium mill tailings, and naturally occurring radioactive materials disposal. Major Accomplishments: licensing renewal of LLRW landfill.

1984 to 1994 — **UTAH DIVISION OF WATER QUALITY**, Salt Lake City, Utah

Environmental Scientist (Hydrogeologist) (January, 1989 to September, 1994)
Report to Ground Water Section Manager. Evaluate hydrogeologic reports, engineering plans and specifications, ground water monitoring plans, closure plans, and other technical reports. Draft ground water discharge permits, evaluate ground water quality and compliance monitoring data, conduct inspections and enforcement. Review and evaluate infiltration, ground water flow and contaminant transport modeling. Coordinate permits with RCRA, CERCLA, and State Radiation Control programs. *Major Projects*: LLRW landfill, mine water disposal, mine tailings ponds, cyanide dump leach operations, and aerospace wastewater disposal. *Major Accomplishments*: develop permit for Utah's first LLRW landfill in coordination with the NRC and state RCRA and Radiation Control requirements.

Underground Injection Control Geologist (September, 1984 to January, 1989)
Report to Permits & Compliance Section Manager. Administer EPA delegated program, coordinate with EPA and two other state agencies, oversee administrative agreements and contracts, prepare EPA program grants and reports. Evaluate hydrogeologic reports and engineering plans, draft UIC and construction permits, witness mechanical integrity tests, evaluate ground water compliance monitoring data, conduct inspections and enforcement action. *Major projects*: Complex Class III solution mine permit, Class V well inventory and assessment, leaky UST cleanups, mine backfill injection, oil-field produced water disposal. *Major Accomplishments*: turn around UIC program by completing overdue EPA projects (left by predecessor) in a short time period, developed Bureau compliance criteria for leaky UST cleanups.

1984 — **U.S. BUREAU OF RECLAMATION**, Provo, Utah

Engineering Geologist (April to September, 1984)
Report to Branch Geologist, develop geologic map of Monks Hollow Dam site, subdivide local stratigraphy, measure stratigraphic sections, supervise one exploratory drilling crew, log core, design piezometers.

Loren B. Morton

EDUCATION

M.S., Brigham Young University, April, 1984
Major: Geology GPA: 3.76/4.00

B.S., Brigham Young University, December, 1981
Major: Geology, Minor: Physics, GPA: 3.35/4.00, Secondary Education Certificate

PROFESSIONAL AFFILIATION

Association of Ground Water Scientists and Engineers
Utah Geological Association, 1989 Assistant Guidebook Editor

PERSONAL

U.S. Citizen Excellent Health
Second Language: Spanish Married, two children
Computer Literate: Word Perfect, Excel, Dataease, Surfer, EPA HELP and Pathrae Models, and other ground water related programs.

REFERENCES

Excellent references available upon request

CONTINUED EDUCATION

Ground Water Hydrology, Dr. Chris Duffy, Utah State University, SLC, UT, CEE 643, 3 credit hours (3.33/4.0), Fall Qtr., 1984.

RCRA Ground Water Monitoring, EPA, SLC, UT, January and March, 1985, 26 class hours.

Fundamentals of Ground Water Contamination, Geraghty & Miller, Inc., Denver, CO, August, 1985, 12 class hours.

Fluvial Mechanics, Dr. Don Reichmuth, Geomax, Inc., SLC, UT, Jan. 1986, 15 class hours.

Refractory Organic Chemicals & Biodegradation, Dr. Ron Oakey, University of Utah, SLC, UT, August, 1986, 4 class hours.

Soil Classification, Bill Lund, Utah Geologic & Mineral Survey, SLC, UT, December, 1986, 10 class hours.

Ground Water Concepts, Drs. Herb Buxton, Keith Prince, Tom Reilly, USGS-WRD, Denver, CO, February - March, 1987, 72 class hours.

Transport & Fate of Contaminants in the Subsurface, Drs. Carl Palmer, Rick Johnson, Joseph Suflita, & Joesph Keely, EPA, Denver, CO, Oct. 1987, 16 class hours.

Environmental Risk Assessment & Management, EPA, SLC, UT, November, 1987, 14 class hours.

Environmental Geophysics-Electrical Methods, Dr. Stan Ward, University of Utah, GG-592R, SLC, UT, October, 1988, 10 class hours.

Introduction to Ground Water Geochemistry, Dr. Alan Mayo, Brigham Young University, SLC, UT, February, 1989, 15 class hours.

Contaminant Fate & Transport Modeling, Drs. Atul Salhotra & Jim Hendry,

National Water Well Association, SLC, UT, September, 1989, 26 class hours.

Environmental Site Assessments, National Water Well Association, SLC, UT, September, 1989, 8 class hours.

Introduction to Ground Water Modeling, Dr. Craig Forester, University of Utah, GG-592-R30, SLC, UT, January - March, 1990, 28 class hours.

Introduction to Solute Transport and Contaminant Migration, Dr. Craig Forester, University of Utah, GG-97-R2, SLC, UT, January - March, 1991, 1.5 CEU.

Bioremediation of Contaminated Soils, Utah State University Summer Seminar, Drs. Bill Doucette, Ryan Dupont, Ron Sims, Darwin Sorensen, Dave Stevens, Department of Civil and Environmental Engineering, Logan, UT, August, 1991, 38 class hours.

Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Dr. David Mason, University of Utah, SLC, UT, February-March, 1993, 14 class hours.

HELP Modeling Workshop for Landfill Design & Evaluation, Drs. Lee Peyton & Paul Schroeder, University of Wisconsin, College of Engineering & Applied Science, Milwaukee, Wisconsin, August, 1993, 20 class hours.

Grammer Training, CareerTrack, SLC, UT, October 13, 1995, 6 class hours.

Fundamentals of Groundwater Geochemistry, Dr. Pat Longmire and Bill Deutsch, National Ground Water Association, Denver, CO, February, 3-4, 1997, 16 class hours.

Practical Applications of Groundwater Geochemistry, Dr. Pat Longmire and Bill Deutsch, National Ground Water Association, Denver, CO, February, 5-7, 1997, 22 class hours.

Radiation Safety at Superfund Sites, Mssrs. Jim Stokes, Guy Cooley, and Jerry Gels, Halliburton NUS Corporation and U.S. EPA, Salt Lake City, UT, March 17-21, 1997, 2.95 CEU.

Techniques of Geostatistical Estimation and Simulation Applied to Environmental Geology, Dr. Chris Rautman and Sean McKenna, Geological Society of America, Salt Lake City, UT, October 18-19, 1997, 1.6 CEU.

Unsaturated Zone Monitoring Workshop, Drs. Peter Wierenga, Art Warrick, Mike Young, University of Arizona Dept. of Soil, Water, and Environmental Science, and U.S. Nuclear Regulatory Commission, Maricopa, AZ, February 11-12, 1998, 15 class hours.

Unsaturated Zone Monitoring Strategies Workshop, Drs. Peter Wierenga, Art Warrick, Mike Young, University of Arizona Dept. of Soil, Water, and Environmental Science, and U.S. Nuclear Regulatory Commission, Rockville, MD, July 9, 1998, 6 class hours.

PUBLICATIONS

Bedrock Neutralization Capacity and its Role in Predicting Sensitive Watersheds in Utah, in Acid Deposition in Utah, Utah Acid Deposition Technical Advisory Committee, Utah Department of Health, Carol Revelt, ed., April, 1990, pp 15-30.

Class V Well Inventory and Report for the Underground Injection Control Program, with James Martin, Utah Division of Environmental Health, November, 1987, 74 pp.

Ground Water Contamination Potential of Drainage Wells in Utah in Proceedings of International Symposium on Class V Injection Well Technology, Underground Injection Practices Council, September, 1987, pp.87-119.

Provisional Geologic and Coal Resources Map of the Mt. Ellen Quadrangle, Garfield County, Utah, Utah Geological & Mineral Survey Map 90, 1986, 15 pp. & 3 Plates.

Geology of the Mt. Ellen 3 SE Quadrangle, Henry Mountains, Garfield County, Utah, Brigham Young University Geology Studies, Vol. 31, Part 1, Dec. 1984, pp. 67-96.

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: Loren Morton Date of Hire: September 10, 1984

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree	4/84		M.S., Geology, BYU
Program Orientation	9/94		
Review of the UDRC Rules	9/94		
Review of the Location of the Regulatory Guides and Reference Materials	9/94		
Essentials of Inspection			
Essentials of Licensing			
SPECIALIZED TRAINING			
Elements of Health Physics (1 wk) USNRC	7/17 - 7/21 2100		
Elements of Nuclear Medicine			
Elements of Medical Therapy			
Elements of Industrial Radiography			
Elements of Transportation			
Elements of Well Logging			
Elements of Pool Irradiators			
Elements of Environmental Monitoring			
Radiological Emergency Response Operations (RERO)			
ADVANCED TRAINING			
Advanced Health Physics			
Elements of Investigations			
OTHER TRAINING			
Groundwater Hydrology	2/85		
Underground Injection Control, Regulation and Technology	4/4/85		

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Training Areas	Date Completed	Management Initials/Signature	Comments
OTHER TRAINING (cont'd)			
Environ. Geophys. Electrical Meth.	10/88		
Principles of Subsurface Contam. Fate & Transport Modeling	9/21/89		
Legal Implications of Environmental Site Assessments	9/22/89		
Intro. to Ground Water Modeling	3/90		
Introduction to Solute Transport and Contaminant Migration	3/91		
HELP Modeling Workshop for Landfill Design & Evaluation	8/11/93		
Fundamentals of Ground Water Geochemistry	2/4/97		
Practical Applications of Ground Water Geochemistry	2/7/97		
Radiation Safety at Superfund Sites	3/21/97		
Techniques of Geostatistical Estimation and Simulation Applied to Environmental Geology	10/19/97		
Geochem of Metals UGWA	3/2001		

RESUME

RAYMOND G. NELSON
5958 Suwannee Circle
Murray, Utah 84123
(801) 266-2502

EDUCATION

1988 TO 1993	University of Utah, Geophysics and Geology Major Overall GPA 2.78, GPA in Majors 3.62
1971 to 1973	Utah Technical College, Electronics Technology
1968 to 1970	LDS Business College, Management and Marketing
1962 to 1965	Skyline High School in Salt Lake County

MEMBERSHIPS

Health Physics Society
Wasatch Gem Society
Rocky Mountain Mineralogical Society

EXPERIENCE

August 1988 to Present
Utah Department of Environmental Quality
Division of Radiation Control (DRC)
Lead Inspector for the DRC for oversight of the Envirocare Radioactive Waste disposal facility at Clive, Utah. Responsible for the radiological portion of the final report to the U.S. Department of Energy on the Vitro UMTRA Project. Responsibilities included environmental monitoring and maintenance , calibration and control all radiological instrumentation for the DRC.

May 1985 to August 1988
Utah Department of Health
Bureau of Radiation Control
UMTRA site coodinator for radiation safety. Supervised nine Bureau technical staff and various contractor personnel to insure that radiological health risks to personnel and the environment were kept to a minimum. Trained Bureau field staff in monitoring procedures, use of radiological test instrumentation and safe work ethics. Oversite to insure that Health Physics staff were present al all times when contractor was working on the site.

March 1984 to May 1985
Chem Nuclear/Morrison Knudsen
Remedial Action Contractor for the U.S. Department of Energy
Supervised fourteen Health Physics Technicians in the process of cleaning up vicinity properties under the Vitro UMTRA project, Salt Lake City, Utah. Oversite of contractor and environmental safety and training of technical staff and contractor staff in radiological safety.

November 1982 to March 1984
Nuclear, Environmental and Geotechnical Group
Ford, Bacon and Davis of Utah
Design, fabrication and installation of electronic control panels. Calibrated, maintained and repaired radiological instrumentation. Worked as field technician on various vicinity properties under the Vitro UMTRA Project, Salt Lake City, Utah. Site assessment as a radiological surveyor and a land surveyor on all but three of the UMTRA Mill sites in the United States.

June 1981 to 1992
Applied Research and Technology of Utah
Field instrumentation and shop supervisor for building electronic control panels. Including panels at the National Reactor Site Fast Gas Processing Facility, Arco, Idaho. Design and fabrication of control panels for Natural Bridges National Monument Photo Voltaic power System, the largest stand alone solar power generating system in the United States.

December 1976 to November 1982
Ford Bacon and Davis of Utah
Field Technician for electronic instrumentation and design area. Designed and built control systems for water treatment plants, water distribution systems, power generation control systems, nuclear waste processing and effluent monitoring systems. The following are some of the systems worked on:

Reno Sparks Waste Water Treatment Facility, Reno, Nevada
East Bay MUDD Water Treatment Facility, Oakland, California
Stockton Waste Water Treatment Facility, Stockton, California
Burley Idaho Water Distribution System
Houston Power and Light Power Distribution System

August 1973 to November 1976
Wiscomb Company of Salt Lake City, Utah
Assembled control panels for waste water treatment plants. Also worked as field installation technician during construction and start up of the various systems.

REFERENCES

Dane Finerfrock, Section Manager
Environmental Monitoring & Uranium Mill Tailings
Utah, Department of Environmental Quality
Division of Radiation Control
(801) 536-4266

Craig W. Jones, Section Manager
Radioactive Material Licensing & X-Ray Registration
Utah, Department of Environmental Quality
Division of Radiation Control
(801) 536-4266

Dr. Emerson Cannon
CEO Micro Core Inc.
Salt Lake City, Utah
(801) 484-8682

Ernie Couch
Chem Nuclear Systems, Inc.
(505) 327-5721

Richard Richie
U.S. Department of Energy
Albuquerque Operations Office
(505) 846-1210

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: Raymond G. Nelson Date of Hire: August 8, 1988

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree	5/93		B S , Geophysics & Geology, U of U
Program Orientation	8/88		
Review of the UDRC Rules	8/88		
Review of the Location of the Regulatory Guides and Reference Materials	8/88		
Essentials of Inspection	6/23/89		
Essentials of Licensing	4/26/91		
SPECIALIZED TRAINING			
Elements of Health Physics (5 wk)	8/10/90		
Elements of Nuclear Medicine			
Elements of Medical Therapy			
Elements of Industrial Radiography	12/5/94		
Elements of Transportation	8/18/89		
Elements of Well Logging	11/5/93		
Elements of Pool Irradiators			
Elements of Environmental Monitoring			
Radiological Emergency Response Operations (RERO)	10/91		
ADVANCED TRAINING			
Advanced Health Physics			
Elements of Investigations			
OTHER TRAINING			
NTS Rad. Safety & Gauge Ops.	5/27/82		
Basic Risk & Decision Making	9/29/88		
Fund. Course for Rad. Monitors	1/28/89		

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Training Areas	Date Completed	Management Initials/Signature	Comments
OTHER TRAINING (cont'd)			
Reducing Radon in Structures	3/10/89		
TRANSCOM	5/12/89		
1st Respondrs Rad. Transp. Emerg.	8/29/89		
Haz. Mat. Response for 1st Resp.	9/15/89		
Fundamental Course for Radiological Response Teams	4/19/91		
Radiological Instructor	4/21/91		
Mitigation Rad. Transp. Emerg.	9/19/95		
RCRA Ground Water Monitoring	97		
RCRA Closure & Post-Closure Care Cost Estimating Software	3/26/98		
MEANS Cost Estimating For Construction	11/2000	DF	
Resp ~~Training~~ Protection Training Prog (TRAIN the TRAINER)	7-31-2001	DF	

STEPHEN R. PALMER, P.E.

EDUCATION

M.S. in Environmental Engineering, August 1990, Brigham Young University, Provo, Utah.
B.S. in Civil Engineering, April 1989, Brigham Young University, Provo, Utah.

EXPERIENCE RECORD

8/01 - Present **Utah Division of Radiation Control**, Salt Lake City, Utah.
Environmental Engineer

- Inspected and reviewed waste placement test pads.
- Revised engineering inspection modules for Envirocare facility.
- Inspected and reviewed portion of radon barrier.

11/00 - 8/01 **Ward Engineering Group**, Salt Lake City, Utah.
Project Manager

- Prepared a preliminary engineering report evaluating wastewater treatment alternatives for Lake Point Improvement District using State standards.
- Managed construction contract administration for a water treatment plant, two lift stations, and a concrete water storage tank.
- Prepared sewer master plan, including computer modeling, for Utah Industrial Depot.

7/98 - 7/00 **Hansen, Allen & Luce (On-Site Environmental)**, Salt Lake City, Utah.
Project Engineer

- Provided plan reviews specifically associated with storm drainage and storm water quality issues.
- Prepared storm drain master plans, including computer modeling using GIS based software interfacing with the HEC-1 model, for both the City of Tooele and the City of South Salt Lake.
- Designed and provided construction oversight of embankment protection for portion of Missouri River in Great Falls, Montana.

4/96 - 7/98 **Brown & Gay Engineers**, Houston, Texas.
Project Engineer.

- Managed construction contract administration for water and wastewater treatment plants, lift stations, water, sanitary sewer and storm sewer utilities. This included reviewing shop drawings and pay estimates, and negotiating change orders.
- Designed a water plant, lift station and activated sludge wastewater treatment plant for Fort Bend County Municipal Utility District No. 1. This included sizing tanks and pumps, designing access roads and site plans, coordinating design work of electrical and structural engineers, preparing design drawings, bid documents and specifications.
- Prepared a preliminary engineering report evaluating rehabilitation of an existing lift station versus construction of a new submersible or wet pit/dry pit lift station, and also

alternative routes for force main construction. This included giving an oral presentation of the report recommendations to officials at the City of Houston.

12/92 - 2/96 **Parsons Engineering Science**, Houston, Texas and Richland, Washington.
Project Engineer.

- Conducted an environmental compliance audit for the Port of Kennewick, which included USTs, based on RCRA/CERCLA/SARA and other federal, state, and local regulations.
- Performed groundwater fate and transport modeling for jet fuel spill at Eielson Air Force Base as part of remedial investigation using the MEPAS computer model.
- Prepared an O&M manual for groundwater pump and treat system and soil vapor extraction system for TCE leak in landfill at Fairchild Air Force Base.
- Prepared remedial investigation/feasibility studies for both Eilson Air Force Base and the Hanford nuclear site.
- Designed a RCRA pond liner system for Gulf Coast Waste Disposal Authority's Bayport Facility plant upgrade.
- Performed groundwater sampling and bioventing pilot tests at Fairchild Air Force Base.
- Performed air dispersion modeling calculations for tank emission control system at Hanford's 200-BP-1 nuclear waste storage tank farm using AIRDOS-PC computer model.

7/90 - 9/92 **John Carollo Engineers**, San Bernardino, California.
Project Engineer.

- Designed several miles of relief trunk sewer for the County Sanitation Districts of Los Angeles in the City of Industry, and in the City of Torrance.
- Prepared a preliminary engineering report evaluating design alternatives for a chlorine contact basin for Carson City, Nevada's Wastewater Treatment Plant.
- Planned nitrification improvements for Chino Basin Municipal Water District's Regional Plant No. 1 using BNR process.
- Developed local limits for industrial dischargers who use the San Clemente Water Reclamation Plant and the City of Santa Maria's Wastewater Treatment Plant, including sampling program.

PROFESSIONAL AFFILIATIONS

U.S. Naval Reserve (Civil Engineering Corps Officer-in-Charge of NMCB 1417)
Naval Reserve Officer of the Year - 2000 (Salt Lake Area Chamber of Commerce)
Society of American Military Engineers
P.E. (Utah, Washington and Texas)

SPECIAL TRAINING

Annual Supervisory Training and 8 hour OSHA Refresher, 1998
First Aid/CPR Certification, 1998
Project Management Training, 1995
OSHA 40 hour Health and Safety, 1993

DIVISION OF RADIATION CONTROL

FY 04

PCN	ORG NAME	5100 General	5160 Exp Rev	5210 Enviro	5250 Uran Mill	5300 X-R/Llc	5500 Radon	5600 FDA/M	5700 WIPP	5800 DOH/XR	5900 Vitro	5950 Gr River	DRC TOTAL
HD7N	ANDERSON, R.					100%							100%
ID61	BARKER, E.			100%									100%
HK9Z	BEST, K.					100%							100%
HU9U	CAMPBELL, W.			100%									100%
HD89	CLEMENTS, C.					100%							100%
IC95	CRAIG, B.								100%				100%
ID60	FAUSTO, J.			100%									100%
HC7P	FELICE, J.		2%			98%							100%
HB09	FINERFROCK, D.	5%		90%			5%						100%
HG9J	GALLOWAY, G.		2%			85%		13%					100%
HC9N	GIDDINGS, S.					98%				2%			100%
HN9B	GRIFFIN, P.		1%			99%							100%
IA99	HAMOS, B.			100%									100%
HK9H	HERBERT, ROB			90%							2%	8%	100%
HP9T	HULTQUIST, J.			50%			50%						100%
ID58	IMAI, B.			100%									100%
HB1O	JONES, C.	5%				94%		1%					100%
HH3F	LARSON, M.	20%		25%		49%	3%		2%			1%	100%
IC24	MORTON, L.	10%		90%									100%
HD5Q	NELSON, R.			100%									100%
HD7P	SANBORN, R.					82%		18%					100%
HR17	SHROPSHIRE, Y.	20%		27%		50%	3%						100%
HA71	SINCLAIR, W.	25%		42%		25%	2%		5%			1%	100%
HS6B	WARD, J.	20%		26%		51%			2%			1%	100%
ID59	PALMER, STEVEN			100%									100%
9999	ENGINEER III				100%								100%
9999	ENV HEALTH SCI III				100%								100%
9999	ENV HEALTH SCI III				100%								100%
9999	OFFICE TECH II				100%								100%
	TOTAL BY ORG	1.05	0.05	11.40	4.00	10.31	0.63	0.32	1.09	0.02	0.02	0.11	29.00

FTE ALLOCATIONS
(to be added)

ORG	5400
NAME	U-Mills
Engineer	100%
Office Tech	100%
Health Physicist	100%

Date Printed: 9/13/2001

STATE OF UTAH
DEPARTMENT OF HUMAN RESOURCE MANAGEMENT
JOB DESCRIPTION

TITLE: ENVIRONMENTAL ENGINEER III

JOB ID: 37505 **STATUS:** 1st Level Approved **EFFECTIVE DATE:** 8/4/2001

Agency Representative: Charlene Lamph

DHRM Representative:

BENCHMARKED TO: ENGINEER III

SAFETY SENSITIVE [None]

SUPERVISORY LEVEL: [None]

STEP RANGE: 59 - 76 **PAY RANGE:** $22.48 - $35.65 **FLSA EXEMPT:** Yes

CAREER SERVICE PROBATIONARY PERIOD: 12 months **EEO DESIGNATION:** Professionals

WORKING CONDITIONS: Everyday Risks **PHYSICAL REQUIREMENTS:** Sedentary

PURPOSE AND DISTINGUISHING CHARACTERISTICS

(Description of the job which distinguishes it from other job(s) in a series or family)

Incumbents in this job are fully competent engineers and utilize advanced training, experience and independent judgement to perform a wide range of technically complex environmental engineering/permitting assignments and/or major multifaceted environmental projects with minimal supervision. Depth of experience allows incumbents to organize, administer and resolve engineering problems and regulation conflicts. Incumbents in the Division of Water Quality, Drinking Water and Radiation Control are required to be valid Utah Licensed Professional Engineers; incumbents in all other divisions within the Department of Environmental Quality need to successfully pass the Fundamentals of Engineering Exam and have a degree in a related engineering discipline. Plans, develops and coordinates major engineering projects requiring the application of advanced engineering skills. Acts as a project lead engineer providing technical direction to less senior engineers in a team environment. Performs research projects to evaluate new environmental engineering technologies, procedures and policy/rules. Assesses feasibility of proposed complex permit engineering plans, projects, systems or equipment for compliance to state and federal environmental rules and regulations. Maintains liaison with project sponsors/commercial entities and coordinates the environmental rules and regulations. Conducts compliance evaluation, investigations, case preparation, and participates in enforcement actions and follow through.

EXAMPLES OF TASKS

(More specific information about the job can be found in the Purpose and Distinguishing characteristics. This list contains tasks that are typically associated with the job. It is not all-inclusive and may vary from position to position. Hiring agencies may, depending on the specific nature of the position, modify these tasks and/or identify additional tasks, based on a current position analysis.).

- Plans, develops and coordinates one or more large, complex projects.
- Participates in a variety of activities including feasibility, materials, research, design, concept and scoping, environmental, safety, specifications, schedules, revisions in the process of designing and developing engineering projects.
- Schedules and conducts inspections and/or investigations.
- Maintains detailed inspection or investigation records, prepares reports, and attends to other related administrative requirements.
- Develops, evaluates, or reviews plans and criteria for a variety of projects and activities; assesses feasibility of proposals.
- Interprets, clarifies, explains and applies agency policy and procedures, business practices, federal or state laws and regulations, etc.
- Discuss, review and interpret plans and specifications.
- Coordinates and/or acts as a liaison between agency or work unit and other agencies, work units, organizations, suppliers, etc.
- Writes or drafts correspondence, reports, documents and/or other written materials.
- Ensures compliance with applicable federal and/or state laws, regulations, and/or agency rules, standards and guidelines, etc.
- Conducts, or represents agency at, formal or informal hearings.
- Other tasks as assigned.

STATE OF UTAH

Job Analysis Questionnaire

DHRM Representative

Agency Representative Charlene Lamph

Agency 480 - Dep Environmental Quality

Agency Approval Lamph, Charlene **Date** 2/21/2001

Level 1 Approval Judy Price **Date** 8/2/2001

Level 2 Approval **Date**

Status 1st Level Approved

Requested Effective Date 9/16/2000

Effective Date 8/4/2001

End Date

Benchmarked To

ID 43005

Title ENGINEER III

Pay Range

Type 1 - On Step **Steps** 59 - 76

FLSA Exempt Yes **Pay Rate** $22.48 - $35.65

Supervisory Level [None]

Working Level Senior

EEO Designation 2 - Professionals

Probation Period 12 months

Working Conditions Everyday Risks

Physical Requirements Sedentary

Safety Sensitive [None]

Purpose And Distinguishing Characteristics

Incumbents in this job are fully competent engineers and utilize advanced training, experience and independent judgement to perform a wide range of technically complex environmental engineering/permitting assignments and/or major multifaceted environmental projects with minimal supervision. Depth of experience allows incumbents to organize, administer and resolve engineering problems and regulation conflicts. Incumbents in the Division of Water Quality, Drinking Water and Radiation Control are required to be valid Utah Licensed Professional Engineers; incumbents in all other divisions within the Department of Environmental Quality need to successfully pass the Fundamentals of Engineering Exam and have a degree in a related engineering discipline. Plans, develops and coordinates major engineering projects requiring the application of advanced engineering skills. Acts as a project lead engineer providing technical direction to less senior engineers in a team environment. Performs research projects to evaluate new environmental engineering technologies, procedures and policy/rules.
Assesses feasibility of proposed complex permit engineering plans, projects, systems or equipment for compliance to state and federal environmental rules and regulations. Maintains liaison with project sponsors/commercial entities and coordinates the environmental rules and regulations. Conducts compliance evaluation, investigations, case preparation, and participates in enforcement actions and follow through.

Comments / Justification

This administrative action creates a new version of this job in connection with the implementation of the new integrated Utah Job Match system.

Senior level is assigned because incumbent is an expert in the field with substantial work experience performing the essential functions of the Job.

KNOWLEDGE, SKILLS, AND ABILITIES

(This list contains KSAs that are typically associated with the job. It is not all-inclusive and may vary from position to position. Hiring agencies may, depending on the specific nature of the position, modify these KSAs and/or identify additional KSAs, based on a current position analysis.)

KNOWLEDGE OF THE FOLLOWING THEORY, PRINCIPLES, PRACTICES AND / OR CONTENT:

- principles and practices of construction
- principles, theories, and practices of engineering
- agency, professional and/or industry standards and practices
- applicable laws, rules, regulations and/or policies and procedures
- specific speciality area of assignment
- agency objectives, organization, structure and mission
- field or agency specific terminology
- negotiation techniques and methods
- agency and/or organizational program(s)
- grammar, spelling and punctuation

SKILLS / ABILITY TO:

- deal with people in a manner which shows sensitivity, tact, and professionalism
- evaluate information against a set of standards
- speak clearly, concisely and effectively; listen to, and understand, information and ideas as presented verbally
- read, interpret and apply laws, rules, regulations, policies and/or procedures
- work independently with little or no supervision
- review and/or edit documents for accuracy and completeness
- Impose and produce reports, documents and related material
- communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing
- weigh the relative costs and benefits of a potential action
- read and interpret maps, plats, charts, plans, blueprints and/or electrical schematics
- perform scientific and/or technical research
- conduct a methodical examination
- plan, organize and prioritize time and workload in order to accomplish tasks and meet deadlines
- monitor or track information or data
- develop approaches for implementation of an idea, program or change in operations
- lead the work of others by monitoring, reviewing, training co-workers and/or delegating work
- work with or contribute to a work group or team to complete assigned task(s)
- assess risk and impose appropriate restrictions

OTHER REQUIREMENTS

REQUIRED CERTIFICATES

- Engineer -In-Training (EIT) or the Fundamentals of Engineering Exam (FE).

REQUIRED LICENSES

- Must be registered as a professional engineer.

Task Number	Task	Knowledge, Skill, or Ability
1	Plans, develops and coordinates one or more large, complex projects.	K: principles, theories, and practices of engineering K: principles and practices of construction S/A: weigh the relative costs and benefits of a potential action S/A: develop approaches for implementation of an idea, program or change in operations K: agency, professional and/or industry standards and practices S/A: read and interpret maps, plats, charts, plans, blueprints and/or electrical schematics K: applicable laws, rules, regulations and/or policies and procedures S/A: lead the work of others by monitoring, reviewing, training co-workers and/or delegating work K: negotiation techniques and methods S/A: speak clearly, concisely and effectively; listen to, and understand, information and ideas as presented verbally S/A: plan, organize and prioritize time and workload in order to accomplish tasks and meet deadlines S/A: read, interpret and apply laws, rules, regulations, policies and/or procedures S/A: work with or contribute to a work group or team to complete assigned task(s)

Task Number	Task	Knowledge, Skill, or Ability
1	Plans, develops and coordinates one or more large, complex projects.	S/A: communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing
		K: agency and/or organizational program(s)
		K: field or agency specific terminology
		K: agency objectives, organization, structure and mission
2	Participates in a variety of activities including feasibility, materials, research, design, concept and scoping, environmental, safety, specifications, schedules, revisions in the process of designing and developing engineering projects.	K: principles, theories, and practices of engineering
		K: principles and practices of construction
		S/A: weigh the relative costs and benefits of a potential action
		S/A: evaluate information against a set of standards
		K: agency, professional and/or industry standards and practices

Task Number	Task	Knowledge, Skill, or Ability
2	Participates in a variety of activities including feasibility, materials, research, design, concept and scoping, environmental, safety, specifications, schedules, revisions in the process of designing and developing engineering projects.	S/A: read and interpret maps, plats, charts, plans, blueprints and/or electrical schematics
		K: applicable laws, rules, regulations and/or policies and procedures
		S/A: read, interpret and apply laws, rules, regulations, policies and/or procedures
		S/A: review and/or edit documents for accuracy and completeness
		S/A: perform scientific and/or technical research
		K: field or agency specific terminology
		K: agency objectives, organization, structure and mission

Task Number	Task	Knowledge, Skill, or Ability
2	Participates in a variety of activities including feasibility, materials, research, design, concept and scoping, environmental, safety, specifications, schedules, revisions in the process of designing and developing engineering projects.	K: specific speciality area of assignment
3	Schedules and conducts inspections and/or investigations.	K: principles, theories, and practices of engineering S/A: conduct a methodical examination K: principles and practices of construction S/A: deal with people in a manner which shows sensitivity, tact, and professionalism S/A: evaluate information against a set of standards K: agency, professional and/or industry standards and practices S/A: read and interpret maps, plats, charts, plans, blueprints and/or electrical schematics K: applicable laws, rules, regulations and/or policies and procedures S/A: plan, organize and prioritize time and workload in order to accomplish tasks and meet deadlines S/A: read, interpret and apply laws, rules, regulations, policies and/or procedures S/A: monitor or track information or data K: field or agency specific terminology K: specific speciality area of assignment
4	Maintains detailed inspection or investigation records, prepares reports, and attends to other related administrative requirements.	K: principles, theories, and practices of engineering

Task Number	Task	Knowledge, Skill, or Ability
4	Maintains detailed inspection or investigation records, prepares reports, and attends to other related administrative requirements.	S/A: conduct a methodical examination
		K: principles and practices of construction
		S/A: deal with people in a manner which shows sensitivity, tact, and professionalism
		S/A: evaluate information against a set of standards
		K: agency, professional and/or industry standards and practices
		S/A: compose and produce reports, documents and related material
		S/A: communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing
		K: grammar, spelling and punctuation
5	Develops, evaluates, or reviews plans and criteria for a variety of projects and activities; assesses feasibility of proposals.	K: principles, theories, and practices of engineering
		S/A: conduct a methodical examination
		K: principles and practices of construction
		S/A: weigh the relative costs and benefits of a potential action
		S/A: assess risk and impose appropriate restrictions

Task Number	Task	Knowledge, Skill, or Ability
5	Develops, evaluates, or reviews plans and criteria for a variety of projects and activities; assesses feasibility of proposals.	S/A: evaluate information against a set of standards
		K: agency, professional and/or industry standards and practices
		S/A: read and interpret maps, plats, charts, plans, blueprints and/or electrical schematics
		S/A: review and/or edit documents for accuracy and completeness
		K: agency and/or organizational program(s)
		K: field or agency specific terminology
		S/A: work independently with little or no supervision
		K: specific speciality area of assignment
6	Interprets, clarifies, explains and applies agency policy and procedures, business practices, federal or state laws and regulations, etc.	K: principles, theories, and practices of engineering
		S/A: deal with people in a manner which shows sensitivity, tact, and professionalism
		K: applicable laws, rules, regulations and/or policies and procedures
		S/A: speak clearly, concisely and effectively; listen to, and understand, information and ideas as presented verbally

Task Number	Task	Knowledge, Skill, or Ability
6	Interprets, clarifies, explains and applies agency policy and procedures, business practices, federal or state laws and regulations, etc.	S/A: read, interpret and apply laws, rules, regulations, policies and/or procedures
		S/A: communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing
		K: agency and/or organizational program(s)
		K: agency objectives, organization, structure and mission
		K: specific speciality area of assignment
7	Discuss, review and interpret plans and specifications.	K: principles, theories, and practices of engineering
		S/A: conduct a methodical examination
		K: principles and practices of construction
		K: agency, professional and/or industry standards and practices
		S/A: read and interpret maps, plats, charts, plans, blueprints and/or electrical schematics
		K: applicable laws, rules, regulations and/or policies and procedures
		S/A: speak clearly, concisely and effectively; listen to, and understand, information and ideas as presented verbally
		S/A: read, interpret and apply laws, rules, regulations, policies and/or procedures

Task Number	Task	Knowledge, Skill, or Ability
7	Discuss, review and interpret plans and specifications.	S/A: review and/or edit documents for accuracy and completeness
		S/A: communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing
		K: field or agency specific terminology
		K: agency objectives, organization, structure and mission
		K: specific speciality area of assignment
8	Coordinates and/or acts as a liaison between agency or work unit and other agencies, work units, organizations, suppliers, etc.	K: principles, theories, and practices of engineering
		S/A: deal with people in a manner which shows sensitivity, tact, and professionalism
		K: agency, professional and/or industry standards and practices
		K: applicable laws, rules, regulations and/or policies and procedures
		K: negotiation techniques and methods
		S/A: speak clearly, concisely and effectively; listen to, and understand, information and ideas as presented verbally
		S/A: communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing
		K: agency objectives, organization, structure and mission
		K: specific speciality area of assignment

Task Number	Task	Knowledge, Skill, or Ability
9	Writes or drafts correspondence, reports, documents and/or other written materials.	K: principles, theories, and practices of engineering
		K: agency, professional and/or industry standards and practices
		S/A: read, interpret and apply laws, rules, regulations, policies and/or procedures
		S/A: review and/or edit documents for accuracy and completeness
		S/A: compose and produce reports, documents and related material
		S/A: communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing
		K: agency and/or organizational program(s)
		K: field or agency specific terminology
		K: grammar, spelling and punctuation
		K: specific speciality area of assignment
10	Ensures compliance with applicable federal and/or state laws, regulations, and/or agency rules, standards and guidelines, etc.	S/A: deal with people in a manner which shows sensitivity, tact, and professionalism
		K: applicable laws, rules, regulations and/or policies and procedures
		K: negotiation techniques and methods

Task Number	Task	Knowledge, Skill, or Ability
10	Ensures compliance with applicable federal and/or state laws, regulations, and/or agency rules, standards and guidelines, etc.	S/A: speak clearly, concisely and effectively; listen to, and understand, information and ideas as presented verbally S/A: read, interpret and apply laws, rules, regulations, policies and/or procedures S/A: work independently with little or no supervision K: agency objectives, organization, structure and mission
11	Conducts, or represents agency at, formal or informal hearings.	K: principles, theories, and practices of engineering K: principles and practices of construction S/A: deal with people in a manner which shows sensitivity, tact, and professionalism S/A: evaluate information against a set of standards K: agency, professional and/or industry standards and practices K: applicable laws, rules, regulations and/or policies and procedures S/A: speak clearly, concisely and effectively; listen to, and understand, information and ideas as presented verbally S/A: read, interpret and apply laws, rules, regulations, policies and/or procedures K: field or agency specific terminology K: agency objectives, organization, structure and mission K: specific speciality area of assignment

Required Certificates

Engineer -In-Training (EIT) or the Fundamentals of Engineering Exam (FE).

Comments

Agency Policy.

Required Licenses

Must be registered as a professional engineer.

Comments

Utah Code Annotated 58-22

Date Printed: 9/13/2001

STATE OF UTAH
DEPARTMENT OF HUMAN RESOURCE MANAGEMENT
JOB DESCRIPTION

TITLE: ENVIRONMENTAL SCIENTIST III Health Physicist Hydrogeologist

JOB ID: 37255 **STATUS:** 1st Level Approved **EFFECTIVE DATE: 8/4/2001**

Agency Representative: Charlene Lamph

DHRM Representative:

BENCHMARKED TO: Local Benchmark

SAFETY SENSITIVE [None]

SUPERVISORY LEVEL: [None]

STEP RANGE: 60 - 75 **PAY RANGE:** $23.09 - $34.69 **FLSA EXEMPT:** Yes

CAREER SERVICE PROBATIONARY PERIOD: 12 months **EEO DESIGNATION:** Professionals

WORKING CONDITIONS: Special Risks **PHYSICAL REQUIREMENTS:** Moderate

PURPOSE AND DISTINGUISHING CHARACTERISTICS

(Description of the job which distinguishes it from other job(s) in a series or family)

Incumbents perform a wide range of environmental scientific/administrative tasks requiring the application of an extensive and broad base of environmental quality experience. Depth of experience allows incumbent to organize, administer and resolve problems and rule/regulation conflict for permitting and other regulatory applications and compliance enforcement activities which apply a broad range of the latest emission/discharge control technology and rare polluting elements. Incumbents lead and coordinate large multifaceted pollution emitting/discharging project/facilities. Reviews complex permit/license applications for compliance with state and federal environmental rules and regulations. Drafts permit approvals. Prepares documentation to support negotiated resolution of non-complaint issues. Monitors the follow through on corrective actions. Coordinates permitting activities with other agencies. Evaluates and interprets data and prepares written technical reports and impact statements. Develops discharge factors. Reviews technical plans and reports concerned with public environmental issues. Develops and recommends environmental rules and proposals in area of specialization. Performs project lead and coordinating tasks from planning to site remediation. Writes program management and project plans. Develops, writes and implements quality assurance and data collection and monitoring programs and procedures.

EXAMPLES OF TASKS

(More specific information about the job can be found in the Purpose and Distinguishing characteristics. This list contains tasks that are typically associated with the job. It is not all-inclusive and may vary from position to position. Hiring agencies may, depending on the specific nature of the position, modify these tasks and/or identify additional tasks, based on a current position analysis.).

- Reviews and/or inspects work for quality, accuracy, and completeness.
- Monitors and evaluates operations, programs, processes and/or practices for quality and effectiveness; makes recommendations for improvement.
- Analyzes, summarizes and/or reviews data; reports findings, interprets results and/or makes recommendations.
- Writes or drafts technical reports, articles or related material based on research, investigation or analysis.
- Reviews and edits technical writing.
- Plans and manages projects and/or programs. Writes (or discusses) project/program plan(s), recommendation(s) and/or finding(s).
- Develops environmental test methodology, determines placement of sampling equipment, maintains and calibrates equipment and evaluates instrumentation for effectiveness.

Schedules and conducts inspections and/or investigations.

Provides technical assistance and contract interpretation to contractors.

- Provides technical assistance on agency issues, services, program(s), and/or computer hardware and software, etc.
- Other tasks as assigned.

KNOWLEDGE, SKILLS, AND ABILITIES

(This list contains KSAs that are typically associated with the job. It is not all-inclusive and may vary from position to position. Hiring agencies may, depending on the specific nature of the position, modify these KSAs and/or identify additional KSAs, based on a current position analysis.)

KNOWLEDGE OF THE FOLLOWING THEORY, PRINCIPLES, PRACTICES AND / OR CONTENT:

- principles, theories, and practices of biological science
- principles, theories, and practices of environmental science
- principles, theories, and practices of the physical sciences
- machines and tools, including their designs, uses, benefits, repair, and maintenance
- principles, theories, and practices of quality management.
- procurement and/or administration of contracts, grants, loans, or similar agreements
- agency and/or organizational program(s)

SKILLS / ABILITY TO:

- use logic to analyze or identify underlying principles, reasons, or facts associated with information or data to draw conclusions
- principles, theories, and practices of environmental science
- agency and/or organizational program(s)
- ensure compliance with contract terms, policies and procedures, etc.
- develop approaches for implementation of an idea, program or change in operations
- communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing
- review and/or edit documents for accuracy and completeness
- principles, theories, and practices of environmental response and remediation

OTHER REQUIREMENTS

OTHER REQUIREMENTS AND CHARACTERISTICS (Not position specific)

- Risks which require the use of special safety precautions and/or equipment, e.g., working around operating machines, working with contagious diseases or hazardous chemicals, etc.
- The work requires some physical exertion such as long periods of standing; walking over rough terrain or rocky surfaces; recurring bending, crouching, stooping, stretching, reaching, or similar activities; recurring lifting of moderately heavy items such as typewriters and record boxes. The work may require specific but common physical characteristics and abilities such as lifting up to 50 pounds, above-average agility, and dexterity.

STATE OF UTAH

Job Analysis Questionnaire

Job 37255 - ENVIRONMENTAL SCIENTIST III

DHRM Representative

Agency Representative Charlene Lamph

Agency 480 - Dep Environmental Quality

Agency Approval Lamph, Charlene **Date** 2/21/2001

Level 1 Approval Judy Price **Date** 8/3/2001

Level 2 Approval **Date**

Status 1st Level Approved

Requested Effective Date

Effective Date 8/4/2001

End Date

Benchmarked To

Type Local

Pay Range

Type 1 - On Step **Steps** 60 - 75

FLSA Exempt Yes **Pay Rate** $23.09 - $34.69

Supervisory Level [None]

Working Level Senior

EEO Designation 2 - Professionals

Probation Period 12 months

Working Conditions Special Risks

Physical Requirements Moderate

Safety Sensitive [None]

Purpose And Distinguishing Characteristics

Incumbents perform a wide range of environmental scientific/administrative tasks requiring the application of an extensive and broad base of environmental quality experience. Depth of experience allows incumbent to organize, administer and resolve problems and rule/regulation conflict for permitting and other regulatory applications and compliance enforcement activities which apply a broad range of the latest emission/discharge control technology and rare polluting elements. Incumbents lead and coordinate large multifaceted pollution emitting/discharging project/facilities. Reviews complex permit/license applications for compliance with state and federal environmental rules and regulations. Drafts permit approvals. Prepares documentation to support negotiated resolution of non-complaint issues. Monitors the follow through on corrective actions. Coordinates permitting activities with other agencies. Evaluates and interprets data and prepares written technical reports and impact statements. Develops discharge factors. Reviews technical plans and reports concerned with public environmental issues. Develops and recommends environmental rules and proposals in area of specialization. Performs project lead and coordinating tasks from planning to site remediation. Writes program management and project plans. Develops, writes and implements quality assurance and data collection and monitoring programs and procedures.

Comments / Justification

This administrative action creates a new version of this job in connection with the implementation of the new integrated Utah Job Match system.

Senior level is assigned because incumbent is an expert in the field with substantial work experience performing the essential functions of the Job.

STATE OF UTAH

Job Analysis Questionnaire

Job 37255 - ENVIRONMENTAL SCIENTIST III

Task Number	Task	Knowledge, Skill, or Ability
1	Reviews and/or inspects work for quality, accuracy, and completeness.	S/A: principles, theories, and practices of environmental science
		S/A: agency and/or organizational program(s)
		K: principles, theories, and practices of quality management.
		S/A: use logic to analyze or identify underlying principles, reasons, or facts associated with information or data to draw conclusions
2	Monitors and evaluates operations, programs, processes and/or practices for quality and effectiveness; makes recommendations for improvement.	S/A: develop approaches for implementation of an idea, program or change in operations
		K: principles, theories, and practices of quality management.
3	Analyzes, summarizes and/or reviews data; reports findings, interprets results and/or makes recommendations.	K: principles, theories, and practices of environmental science
		K: principles, theories, and practices of biological science
		K: principles, theories, and practices of the physical sciences
		S/A: use logic to analyze or identify underlying principles, reasons, or facts associated with information or data to draw conclusions
4	Writes or drafts technical reports, articles or related material based on research, investigation or analysis.	S/A: communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing
		K: principles, theories, and practices of biological science

STATE OF UTAH

Job Analysis Questionnaire

Task Number	Task	Knowledge, Skill, or Ability
4	Writes or drafts technical reports, articles or related material based on research, investigation or analysis.	K: principles, theories, and practices of the physical sciences
5	Reviews and edits technical writing.	S/A: review and/or edit documents for accuracy and completeness
6	Plans and manages projects and/or programs. Writes (or discusses) project/program plan(s), recommendation(s) and/or finding(s).	S/A: communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing
		K: agency and/or organizational program(s)
		S/A: develop approaches for implementation of an idea, program or change in operations
7	Develops environmental test methodology, determines placement of sampling equipment, maintains and calibrates equipment and evaluates instrumentation for effectiveness.	S/A: use logic to analyze or identify underlying principles, reasons, or facts associated with information or data to draw conclusions
		K: machines and tools, including their designs, uses, benefits, repair, and maintenance
8	Schedules and conducts inspections and/or investigations.	S/A: ensure compliance with contract terms, policies and procedures, etc.
9	Provides technical assistance and contract interpretation to contractors.	S/A: ensure compliance with contract terms, policies and procedures, etc.
		K: procurement and/or administration of contracts, grants, loans, or similar agreements
10	Provides technical assistance on agency issues, services, program(s), and/or computer hardware and software, etc.	S/A: principles, theories, and practices of environmental response and remediation
		S/A: principles, theories, and practices of environmental science
		S/A: agency and/or organizational program(s)

STATE OF UTAH

Job Analysis Questionnaire

Job 37255 - ENVIRONMENTAL SCIENTIST III

Task Number	Task	Knowledge, Skill, or Ability
10	Provides technical assistance on agency issues, services, program(s), and/or computer hardware and software, etc.	K: principles, theories, and practices of biological science K: principles, theories, and practices of the physical sciences

Other Requirements and Characteristics

Risks which require the use of special safety precautions and/or equipment, e.g., working around operating machines, working with contagious diseases or hazardous chemicals, etc.

The work requires some physical exertion such as long periods of standing; walking over rough terrain or rocky surfaces; recurring bending, crouching, stooping, stretching, reaching, or similar activities; recurring lifting of moderately heavy items such as typewriters and record boxes. The work may require specific but common physical characteristics and abilities such as lifting up to 50 pounds, above-average agility, and dexterity.

Comments

Date Printed: 9/13/2001

STATE OF UTAH
DEPARTMENT OF HUMAN RESOURCE MANAGEMENT
JOB DESCRIPTION

T[illegible]: OFFICE TECHNICIAN III

JOB ID: 11115 **STATUS:** 2nd Level Approved **EFFECTIVE DATE:** 7/7/2001

Agency Representative:

DHRM Representative: Judith Price

BENCHMARKED TO: SECRETARY

SAFETY SENSITIVE [None]

SUPERVISORY LEVEL: [None]

STEP RANGE: 24 - 41 **PAY RANGE:** $8.70 - $13.79 **FLSA EXEMPT:** No

CAREER SERVICE PROBATIONARY PERIOD: 6 months **EEO DESIGNATION:** Administrative Support

WORKING CONDITIONS: Everyday Risks **PHYSICAL REQUIREMENTS:** Sedentary

PURPOSE AND DISTINGUISHING CHARACTERISTICS

(Description of the job which distinguishes it from other job(s) in a series or family)

Incumbents in this job exercise independent judgment in office specialities and perform the most complex production tasks requiring advanced general office skills plus a comprehensive knowledge of pertinent rules, regulations, policies, and procedures. Incumbent will either perform functional supervisory/lead worker responsibilities or serve as the focal point for advanced agency-specific assignment(s). Incumbent may lead or supervise a small clerical unit by prioritizing work flow, authorizing selected clerical, procedures, ensuring quality control, and providing subordinates with on-the-job training. Incumbent process a [illegible] of agency documents by reviewing for accuracy and completeness, updating information, evaluating against policy, comparing elements for consistency or logical relationship, and otherwise taking action where such procedures my require independen judgment in applying agency regulations, policies and procedures. Originates correspondence, documentation, and other written communication; assists the public and others to complete forms and applications; locates and assembles records and information which may be complex or difficult to identify, and which may require substantial research, judgment, and subject matter knowledge. Prepares and generates recurring reports involving automated processes and thorough subject matter understanding.

EXAMPLES OF TASKS

(More specific information about the job can be found in the Purpose and Distinguishing characteristics This list contains tasks that are typically associated with the job. It is not all-inclusive and may vary from position to position. Hiring agencies may, depending on the specific nature of the position, modify these tasks and/or identify additional tasks, based on a current position analysis.).

- Prepare and/or process documents; review for accuracy and completeness; update information and/or evaluate against policy; compare elements for consistency or logical relationships, etc.
- Edits written material for accuracy, format, and arrangement of material.
- Writes or drafts correspondence, reports, documents and/or other written materials.
- Types and prepares reports or other written materials from source documents, transcription, etc.
- Retrieves data found in databases to generate requested reports.
- Assists the public and others to locate, view, or assemble filmed, scanned, or archived documents and/or information.
- Records and/or transcribes minutes of meetings, hearings, dictation, dialogue, etc., and produces document in draft or final format.
- Acts as a resource to provide information or determine the most effective way of meeting the needs of management, staff, clients customers.

[illegible]her tasks as assigned.

KNOWLEDGE, SKILLS, AND ABILITIES

(This list contains KSAs that are typically associated with the job. It is not all-inclusive and may vary from position to position. Hiring agencies may, depending on the specific nature of the position, modify these KSAs and/or identify additional KSAs, based on a current position analysis.)

)WLEDGE OF THE FOLLOWING THEORY, PRINCIPLES, PRACTICES AND / OR CONTENT:

- grammar, spelling and punctuation
- research methods, techniques, and/or sources of information

SKILLS / ABILITY TO:

- use automated software applications
- communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing
- enter, transcribe, record, store, or maintain information in either written or electronic form.
- grammar, spelling and punctuation
- assemble, sort, and/or distribute documents, supplies, and/or materials/items
- compile, code, categorize, calculate, tabulate, audit, verify, or process information or data
- review and/or edit documents for accuracy and completeness
- organize information in a clear and concise manner
- find, gather and collect information or data
- deal with people in a manner which shows sensitivity, tact, and professionalism
- speak clearly, concisely and effectively; listen to, and understand, information and ideas as presented verbally

OTHER REQUIREMENTS

OTHER REQUIREMENTS AND CHARACTERISTICS (Not position specific)

- Risks found in the typical office setting, which is adequately lighted, heated and ventilated, e.g., safe use of office equipment, avoiding trips and falls, observing fire regulations, etc.
- Typically, the employee may sit comfortably to perform the work. However, there may be some walking; standing; bending; carrying of light items such as papers, books, small parts; driving an automobile, etc. No special physical demands are required to perform the work.

STATE OF UTAH

Job Analysis Questionnaire

Job 11115 - OFFICE TECHNICIAN III

DHRM Representative Judith Price

Agency Representative

Agency 000 - Cross Agency

Agency Approval Cass Opheikens **Date** 2/27/2001

Level 1 Approval Cass Opheikens **Date** 2/27/2001

Level 2 Approval Judy Price **Date** 7/17/2001

Status 2nd Level Approved

Requested Effective Date 3/31/2001

Effective Date 7/7/2001

End Date

Benchmarked To

ID 11001

Title SECRETARY

Pay Range

Type 1 - On Step **Steps** 24 - 41

FLSA Exempt No **Pay Rate** $8.70 - $13.79

Supervisory Level [None]

Working Level Senior

EEO Designation 6 - Administrative Support

Probation Period 6 months

Working Conditions Everyday Risks

Physical Requirements Sedentary

Safety Sensitive [None]

Purpose And Distinguishing Characteristics

Incumbents in this job exercise independent judgment in office specialities and perform the most complex production tasks requiring advanced general office skills plus a comprehensive knowledge of pertinent rules, regulations, policies, and procedures. Incumbent will either perform functional supervisory/lead worker responsibilities or serve as the focal point for advanced agency-specific assignment(s). Incumbent may lead or supervise a small clerical unit by prioritizing work flow, authorizing selected clerical, procedures, ensuring quality control, and providing subordinates with on-the-job training. Incumbent process a variety of agency documents by reviewing for accuracy and completeness, updating information, evaluating against policy, comparing elements for consistency or logical relationship, and otherwise taking action where such procedures my require independen judgment in applying agency regulations, policies and procedures. Originates correspondence, documentation, and other written communication; assists the public and others to complete forms and applications; locates and assembles records and information which may be complex or difficult to identify, and which may require substantial research, judgment, and subject matter knowledge. Prepares and generates recurring reports involving automated processes and thorough subject matter understanding.

Comments / Justification

This administrative action creates a new version of the job in connection with the implementation of the new integrated Utah Job Match System.

Senior level is assigned because incumbent is an expert in the field with substantial work experience performing the essential functions of the Job.

Task Number	Task	Knowledge, Skill, or Ability
1	Prepare and/or process documents; review for accuracy and completeness; update information and/or evaluate against policy; compare elements for consistency or logical relationships, etc.	S/A: assemble, sort, and/or distribute documents, supplies, and/or materials/items S/A: compile, code, categorize, calculate, tabulate, audit, verify, or process information or data S/A: review and/or edit documents for accuracy and completeness S/A: communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing S/A: use automated software applications K: grammar, spelling and punctuation
2	Edits written material for accuracy, format, and arrangement of material.	S/A: review and/or edit documents for accuracy and completeness S/A: grammar, spelling and punctuation
3	Writes or drafts correspondence, reports, documents and/or other written materials.	S/A: communicate information and ideas clearly, and concisely, in writing; read and understand information presented in writing S/A: use automated software applications K: grammar, spelling and punctuation

STATE OF UTAH

Job Analysis Questionnaire

Job 11115 - OFFICE TECHNICIAN III

Task Number	Task	Knowledge, Skill, or Ability
4	Types and prepares reports or other written materials from source documents, transcription, etc.	S/A: assemble, sort, and/or distribute documents, supplies, and/or materials/items
		S/A: organize information in a clear and concise manner
		S/A: use automated software applications
		K: research methods, techniques, and/or sources of information
5	Retrieves data found in databases to generate requested reports.	S/A: organize information in a clear and concise manner
		S/A: use automated software applications
6	Assists the public and others to locate, view, or assemble filmed, scanned, or archived documents and/or information.	S/A: find, gather and collect information or data
		S/A: deal with people in a manner which shows sensitivity, tact, and professionalism
		S/A: speak clearly, concisely and effectively; listen to, and understand, information and ideas as presented verbally
		S/A: assemble, sort, and/or distribute documents, supplies, and/or materials/items
7	Records and/or transcribes minutes of meetings, hearings, dictation, dialogue, etc., and produces document in draft or final format.	S/A: enter, transcribe, record, store, or maintain information in either written or electronic form.
		S/A: assemble, sort, and/or distribute documents, supplies, and/or materials/items
8	Acts as a resource to provide information or determine the most effective way of meeting the needs of management, staff, clients or customers.	S/A: find, gather and collect information or data

STATE OF UTAH

Job Analysis Questionnaire

Job 11115 - OFFICE TECHNICIAN III

Task Number	Task	Knowledge, Skill, or Ability
8	Acts as a resource to provide information or determine the most effective way of meeting the needs of management, staff, clients or customers.	S/A: deal with people in a manner which shows sensitivity, tact, and professionalism S/A: speak clearly, concisely and effectively; listen to, and understand, information and ideas as presented verbally

Other Requirements and Characteristics

Risks found in the typical office setting, which is adequately lighted, heated and ventilated, e.g., safe use of office equipment, avoiding trips and falls, observing fire regulations, etc.

Typically, the employee may sit comfortably to perform the work. However, there may be some walking; standing; bending; carrying of light items such as papers, books, small parts; driving an automobile, etc. No special physical demands are required to perform the work.

Comments

UTAH DIVISION OF RADIATION CONTROL
TRAINING POLICY STATEMENT

We will ensure that staff will be qualified to do regulatory and inspection functions for all types of facilities regulated by the Utah Radiation Control Board. We also recognize the need for continued staff development through cross-work training and training required by staff to maintain current qualifications.

An individual will not be a lead inspector at a regulated facility unless the individual has shown competency in the program training areas applicable to that type of facility. An individual will not be a senior license reviewer for a license unless the individual has shown competency in the program training areas applicable to that type of license.

The program training areas and essential elements to be covered in each program training area are stated on the Utah Radiation Control Training Qualification Form. When an individual has shown competency in a particular training area to management, the training qualification form for that individual will be completed by a member of management.

In-house training under the supervision of a mentor or personal study and exam proctoring may be used in lieu of more formal training when such training is impractical or unfeasible. When in-house training is provided to an individual, documentation demonstrating the successful completion of the training and management approval of the training will be maintained.

Refresher training will be provided, as needed. This additional training recognizes that staff training does not stop with initial qualification, but that training should be made available for experienced staff on the basis of need, special circumstances, and the necessity of keeping current with inspection and regulatory programs.

William J. Sinclair, Division Director

Date

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Name: _____ Date of Hire:

Training Areas	Date Completed	Management Initials/Signature	Comments
BASIC TRAINING			
College/University Degree			
Program Orientation			
Review of the UDRC Rules			
Review of the Location of the Regulatory Guides and Reference Materials			
Essentials of Inspection			
Essentials of Licensing			
SPECIALIZED TRAINING			
Elements of Health Physics (5 wk)			
Elements of Nuclear Medicine			
Elements of Medical Therapy			
Elements of Industrial Radiography			
Elements of Transportation			
Elements of Well Logging			
Elements of Pool Irradiators			
Elements of Environmental Monitoring			
Radiological Emergency Response Operations (RERO)			
ADVANCED TRAINING			
Advanced Health Physics			
Elements of Investigations			
OTHER TRAINING			

UTAH RADIATION CONTROL TRAINING QUALIFICATION FORM

Training Areas	Date Completed	Management Initials/Signature	Comments
OTHER TRAINING (cont'd)			

Issue Date: 01/05/01

Section XII: Uranium Recovery Inspector NRC Inspector Qualification Journal

Applicability

This NRC Inspector Qualification Journal implements NRC Manual Chapter 1246, Appendix A, Section XII, by establishing the minimum training requirements for personnel assigned to perform safety inspection activities at uranium recovery facilities. The Qualification Journal must provide traceable documentation to show that minimum requirements are met for each inspector.

The NRC Inspector Qualification Journal consists of a series of qualification guides and signature cards. Each signature card is used to document task completion, as indicated by the appropriate signature blocks. Each signature card has a corresponding qualification guide which establishes the minimum knowledge levels or areas of study that must be completed for each signature card.

Most of the qualification guides are divided into sections. The review sections of the qualification guides identify references with general application to the inspector's qualification. The inspector is expected to have a general familiarity with these references. Other sections of the qualification guides identify specific references that have direct application to an inspection discipline. The inspector is expected to demonstrate detailed knowledge of the inspection discipline specific references.

In order to support the review of upper tier documents, programs, and policies, the inspector's First Line Supervisor will assign one or more uranium recovery facilities as reference facilities. The selection of a reference facility is intended to provide the inspector's management with the ability to tailor the qualification process to the experience and training level of the inspector, and to meet the inspection needs of the NRC. The use of specific real world material will reinforce the qualification process.

INSPECTOR QUALIFICATION JOURNAL
Uranium Recovery Inspector

Name	Title	Branch	Section
_____	_____	_____	_____

To complete your qualification as a Uranium Recovery Inspector you are to complete the following signature cards. All signoffs shall include the signature of the responsible reviewer and the date. Maintain these cards in a notebook along with any background or written material required by the program. This notebook will comprise your NRC Inspector Qualification Journal.

	Signature When Complete	Date
1. NRC Orientation	_____ First Line Supervisor	_____
2. Code of Federal Regulations	_____ First Line Supervisor	_____
3. Office Instructions	_____ First Line Supervisor	_____

4. Regulatory Guidance	First Line Supervisor	
5. NRC Inspection Manual Chapters (MC)	First Line Supervisor	
6. Industry Codes and Standards	First Line Supervisor	
7. Inspection Accompaniments	First Line Supervisor	
8. NRC Management Directives	First Line Supervisor	
9. Review of Significant Events at Uranium Recovery Facilities and/ or Facilities for Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material	First Line Supervisor	
10. Formal Training	First Line Supervisor	
Qualification Board Requirement Met	Second Level Supervisor or Board Chairman	
Recommended as a qualified inspector	Second Level Supervisor	
Certification Memo Issued	Second Level Supervisor	

Qualification Card 1
NRC Orientation

	Initials	Date
A. Site Orientation		
1. New employee processing package completed	Employee	
2. Facility tour and ntroduction	First Line Supervisor	
B. NRC Organization		

1. Review of NRC headquarters and NMSS organization	_____ Employee	_____
2. Discussion of NRC organization	_____ First Line Supervisor	_____

Qualification Card 2
Code of Federal Regulations (CFR)

	Initials	Date
A. Familiarization with selected CFR parts completed	_____ Employee	_____
B. Discussion completed on CFR parts related to Uranium Recovery program	_____ First Line Supervisor	_____

Qualification Card 3
Office Instructions

	Initials	Date
A. Familiarization with office policies and procedures	_____ Employee	_____
B. Discussion completed on office policies and procedures	_____ First Line Supervisor	_____

Qualification Card 4
Regulatory Guidance

	Initials	Date
A. Review of egulatory guidance		
1. Regulatory Guides	_____ Employee	_____

2. Information Notices /Bulletins	_____ Employee	_____
3. NUREGs	_____ Employee	_____
4. Generic Letters	_____ Employee	_____
5. Federal Register Notices	_____ Employee	_____
6. Policy and Guidance Directives	_____ Employee	_____
7. NRC Branch Technical Positions	_____ Employee	_____
8. SECY Papers	_____ Employee	_____
B. Discussion of regulatory guidance with application to the Uranium Recovery program	_____ First Line Supervisor	_____

Qualification Card 5
NRC Inspection Manual Chapters (MC)

	Initials	Date
A. Review of appropriate NRC MCs completed	_____ Employee	_____
B. Discussion of NRC MCs and its relation to the Uranium Recovery inspection program	_____ First Line Supervisor	_____

Qualification Card 6
Industry Codes and Standards

	Initials	Date
A. Review of selected codes and standards completed	_____ Employee	_____
B. Discussion of the	_____	_____

application of codes First Line Supervisor

and standards
related to the
Uranium Recovery
program

Qualification Card 7
Inspection Accompaniments

Initials Date

A. Inspections completed

1. _____ _____ _____
Facility Employee
2. _____ _____ _____
Facility Employee
3. _____ _____ _____
Facility Employee
4. _____ _____ _____
Facility Employee

B. Discussion of inspection and employees's role

1. _____ _____ _____
Facility First Line Supervisor
2. _____ _____ _____
Facility First Line Supervisor
3. _____ _____ _____
Facility First Line Supervisor
4. _____ _____ _____
Facility First Line Supervisor

Qualification Card 8
NRC Management Directives

Initials Date

A. Review of selected portions of the NRC Management Directives completed _____ _____
Employee

B. Discussion of the application of the NRC Management Directives to the Uranium Recovery inspection program	First Line Supervisor	

Qualification Card 9
Review of Significant Uranium Recovery Events

	Initials	Date
A. Review of selected significant historical events	Employee	
B. Discussion of the importance of these events and lessons learned	First Line Supervisor	

Qualification Card 10
Formal Training

A. CORE TRAINING:	Initials	Date
1. Fundamentals of Inspection Course (G-101)	Training Coordinator	
2. Root Cause/Incident Investigation Workshop (G-205)	Training Coordinator	
3. Inspecting for Performance Course - Materials Version (G-304)	Training Coordinator	
4. Effective Communications for NRC Inspectors	Training Coordinator	
5. OSHA Indoctrination Course (G-111)	Training Coordinator	
6. NMSS Radiation Worker Training	Training Coordinator	

(H-102)

7. General Health Physics Practices for Uranium Recovery Course (F-104) or General Health Physics Practices for Fuel Cycle Facilities Directed Self-Study Course (F-102S)	_____ Training Coordinator	_____
8. NRC Inspection Team Leader Workshop	_____ Training Coordinator	_____

B. SPECIALIZED TRAINING

Other specialized training courses required for license reviewers performing licensing activities in specific areas:

Course Title	Course #	Initials	Initials	Date
_____	_____	_____ Supervisor	_____ Training Coordinator	_____
_____	_____	_____ Supervisor	_____ Training Coordinator	_____
_____	_____	_____ Supervisor	_____ Training Coordinator	_____
_____	_____	_____ Supervisor	_____ Training Coordinator	_____

Qualification Guide 1
NRC Orientation

A. Site Orientation

1. The qualifying individual should read and complete, as appropriate, the following forms for processing into the NRC:

a. Personnel information

b. Health insurance elections

c. Retirement plan elections

d. Savings elections (e.g. U.S. Savings Bonds, TSP, etc.)

e. Fitness for Duty requirements and physical examination

f. Any other forms which may be required by NRC Office of Human Resources

g. Forms for issuance of tagged, controlled NRC equipment

h. Payroll forms and time cards

i. Regulatory Information Tracking System (RITS)

2. The First Line Supervisor should orient the qualifying individual to the facility as follows:

a. Tour the facility and introduce the qualifying individual to the staff

b. Indicate to the qualifying individual the location of controlled documents, reference material, supplies, office equipment, classrooms, etc.

B. NRC Organization

1. The qualifying individual should review and become familiar with:

a. Organizational charts of division, NMSS, regions and headquarters and overall NRC organization (NUREG 0325)

b. Role of Headquarters in policy and interpretation of regulations

c. Role of NRC General Counsel

d. Role of NRC Inspector General

e. Role of NRC Public Affairs

f. Role of NRC Office of Investigations

g. Role of NRC Office of Enforcement

h. Physical location of NRC offices and regions

i. Role of NRC as a regulatory agency

(1) 10 CFR Part 1 (Organization)

(2) Atomic Energy Act of 1954, as amended

(3) Energy Reorganization Act of 1974, as amended

(4) NRC Enforcement Policy (NUREG 1600)

(5) Incident Response Plan (NUREGs 0728 and 0845)

(6) Energy Policy Act of 1992

2. The First Line Supervisor should discuss NRC organization and role with the qualifying individual to ensure the qualifying individual has a full understanding of NRC's organization and mission and the role of the license reviewer in that mission.

Qualification Guide 2
Code of Federal Regulations (CFR)

A. A selection of currently applicable CFR Parts should be made by the First Line Supervisor. The selection should include the references listed below and be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions.

1. 10 CFR Part 1 Statement of organization and general information

2. 10 CFR Part 2 Rules of practice for domestic licensing proceedings and issuance of orders

3. 10 CFR Part 9 Public Records

4. 10 CFR Part 19 Notices, instructions and reports to workers; inspections

5. 10 CFR Part 20 Standards for protection against radiation (includes selected Questions and Answers, Q & As)

6. 10 CFR Part 21 Reporting of defects and noncompliance

11. 30 CFR Part 828 Special Permanent Program Performance Standards - In-Situ Processing

12. 40 CFR Part 141 National Primary Drinking Water Regulations

13. 40 CFR Part 192 Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings

B. Following completion of the qualifying individual's self study of the listed CFR Parts, a discussion will be held with the qualifying inspector by the First Line Supervisor to test the qualifying individual's knowledge of these Parts. To the extent possible, recent application of various sections, new regulatory initiatives, and current industry issues should be emphasized.Qualification Guide 3
Office Instructions

A. NMSS Office Policies and Procedures

1. Read the NMSS Policy and Procedures Letters (PPLs)

1-8 Differing Professional Views and Opinions

1-11 Communications with Licensees

1-19 Notification of Regional Administrators

1-22 Quality Assurance

1-23 Open Meetings

1-24 Office of Investigation and the release of information on investigations/inspections

1-27 Management of Allegations

1-40 Legislative and Regulatory Review Requirements for the Office of the Inspector General

1-42 Radiation Protection Procedures for NMSS Employees

2. The qualifying individual should review the NMSS policies and practices on:

a. Travel, including Management Directive 14.1 Official Temporary Duty Travel

b. Telephone use

c. Policies on use of annual leave and sick leave and excused leave, including Bulletin 4135, Leave Administration

d. Work schedule, including NRC Appendix 4136, Hours of work and Premium Pay

3. Use of government equipment, including computers (NUDOCS and ADAMS) and Management Directive 13.1, Property Management

f. Union activities, including Management Directive 10.102, Labor- Management Relations Program for Federal Employees

g. Communications outside NRC

h. Policies on outside employment and acceptance of gifts

i. Participation in political activities

j. Routing of mail and procedures for sending mail and materials (via U.S. Mail, Federal Express, etc.), including Management Directive 3.23, Mail Management

k. Ordering of documents (e.g NUREGs)

l. NMSS emergency and evacuation procedures

m. Employee appraisal system and Individual Development Plan (IDP)

(1) Employee trial period (Management Directive 10.14 Employment and Staffing)

(2) Employee appraisals (Management Directive 10.67 (Non-SES Performance Appraisal System)

n. Differing Professional Views or Opinions (Management Directive 10.159, General Personnel Management Provisions)

o. NMSS Delegation of Authority (September 18, 1995)

B. The First Line Supervisor should discuss these policies and practices with the qualifying individual to ensure that the qualifying individual has a full and complete understanding.

Qualification Guide 4
Regulatory Guidance

A. A selection of currently applicable regulatory guidance should be identified by the First Line Supervisor. These references should include those listed below and should be documented. The qualifying individual should be expected to have a general knowledge of the topics addressed in the references. The review may be accomplished by self-study, study-quizzes, briefings, or discussions. Note that many Regulatory Guides reference or endorse industry codes and standards listed in Qualification Guide 6. Study of corresponding and subtier codes and standards is recommended.

1. Regulatory Guides (use latest revision)

3.11 Design, Construction, and Inspection of Embankment Retention Systems for Uranium Mills

3.56 General Guidance for Designing, Testing, Operating and Maintaining Emission Control Devices at Uranium Mills

3.59 Methods for Estimating Radioactive and Toxic Airborne Source Terms for Uranium Milling Operations

3.63 Onsite Meteorological Measurement Program for Uranium Recovery Facilities-Data Acquisition and Reporting

3.64 Calculation of Radon Flux Attenuation by Earthen Uranium Mill Tailings Covers

4.14 Radiological Effluent and Environmental Monitoring at Uranium Mills

4.15 Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment

8.2 Guide for Administrative Practices in Radiation Monitoring

8.7 Instructions for Recording and Reporting Occupational Radiation Exposure Data

8.9 Acceptable Concepts, Models, Equations, and Assumptions for a Bioassay Program

8.10 Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As Is Reasonably Achievable

8.11 Applications of Bioassay for Uranium

8.13 Instruction Concerning Prenatal Radiation Exposure

8.15 Acceptable Programs for Respiratory Protection

8.22 Bioassay at Uranium Mills

8.25 Air Sampling in the Workplace

8.29 Instruction Concerning Risks from Occupational Radiation Exposure

8.30 Health Physics Surveys in Uranium Mills

8.31 Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Mills Will Be As Low As Reasonably Achievable

8.34 Monitoring Criteria and Methods to Calculate Occupational Radiation Doses

8.36 Radiation Dose to the Embryo/fetus

8.37 ALARA Levels for Effluents from Material Facilities

10.1 Compilation of Reporting Requirements for Persons Subject to NRC Regulations

ES 114-4 Guidelines for Groundwater Monitoring at In-Situ Uranium Solution Mines

Others as selected by the First Line Supervisor

2. Information Notices (IN) and Bulletins (BL)

IN 93-60 Reporting Fuel Cycle and Materials Events to the NRC Operations Center, Supplement 1

IN 94-023 Guidance to Hazardous, Radioactive and Mixed Waste Generators on Elements of Waste Minimization

IN 95-055 Handling Uncontaminated Yellowcakes Outside of Facility Processing Circuit

IN 96-047 Record Keeping, Decommissioning Notifications for Disposals of Radwaste by Land Burial

IN 97-050 Contaminated Lead Products

IN 97-055 Calculation of Surface Activity for Contaminated Equipment & Materials

IN 97-057 Leak Testing of Packaging used in Transport of Radioactive Material

IN 97-058 Mechanical Integrity of In-Situ Leach Injection Wells & Piping

Others as selected by the First Line Supervisor

3. NUREGs (latest revision, where applicable)

NUREG 0325 NRC Functional Organization Chart

NUREG 1569 Draft Standard Review Plan (SRP) for In Situ Leach Uranium Extraction License Applications

NUREG-1600 General Statement of Policy and Procedures for NRC Enforcement Actions

NUREG 1621 Final SRP for the Review of Remedial Action of Inactive Mill Tailings Sites under Title I of the UMTRCA

NUREG/CR-4884 Interpretation of Bioassay Measurements

NUREG/CR-5849 Manual for Conducting Radiological Surveys in Support of License Termination

NUREG/CR-6232 Assessing the Environmental Availability of Uranium in Soils and Sediments

Others as selected by the First Line Supervisor

4. Generic Letters (GL)

97-03 Annual Financial Surety Update Requirements for Uranium Recovery Licensees

Others as selected by the First Line Supervisor.

5. Federal Register Notices

60 FR 49296 Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments (September 22, 1995)

Others as selected by the First Line Supervisor.

6. Policy and Guidance Directives (PGD)

PGD 8-01 Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Byproduct, Source, and Special Nuclear Material Licensees, November 1983

UR 90-03 Memorandum of Understanding Between the U.S. Department of Energy and the NRC, November 1990

UR 91-01 Costs for Fencing Reclaimed Title II Sites, Letter from R.L. Bangart to A.B. Beach, February 1991

UR 91-02 Standard Format for Completion Review Report (CRR), LLUR, June 1991

UR 91-03 Position on Disposal Of In-Situ Wastes, LLWM, September 1991

UR 93-02 Standard Review Plan for the Review of Remedial Action of Inactive Mill Tailings Sites Under Title I of the Uranium Mill Tailings Radiation Control Act, Rev. 1, June 1993

Others as selected by the First Line Supervisor

7. Branch Technical Position

Alternate Concentration Limits for Title II Uranium Mills (January 1996)

Design of Erosion Protection Covers for Stabilization of Uranium Mill Tailings Sites (August 1990)

Effluent Disposal at Licensed Uranium Recovery Facilities (April 1995)

Others As selected by the First Line Supervisor.

8. SECY Papers

97-110 Status Report on Implementation of Dam Safety Program (May 29, 1997)

95-155 Review of Previously Approved Reclamation Plans (June 14, 1995)

90-316 Decommissioning Records Plan, Records Management Guidelines (RMG)

Others as selected by the First Line Supervisor.

Qualification Guide 5
NRC Inspection Manual Chapters (MC)

A. A selection of currently applicable NRC MC and Inspection Procedure (IP) references with direct application to the Uranium Recovery inspection should be identified by the First Line Supervisor. The application of the specific references to the inspection program should be studied in detail by the qualifying individual.

1. REPORTS/COMMUNICATIONS/FOLLOW-UP

MC 0230 Morning Report
MC 0610 Inspection Reports
MC 0620 Inspection Documents and Records
MC 0720 NRC Bulletins and Information Notices
MC 0801 Inspector Feedback
MC 1120 Preliminary Notifications

IP 92701 Follow-up
IP 92703 Follow-up of Confirmatory Action Letters

2. INSPECTIONS

MC 0300 Announced and Unannounced Inspections
MC 1246 Formal Qualification Programs in Nuclear Material Safety and Safeguards Program Area

MC 2620 On-Site Construction Reviews of Remedial Actions at Inactive Uranium Mill Tailings Sites (Title I UMTRCA)
MC 2641 In-Situ Leach Facilities Inspection Program
MC 2801 Uranium Mill and 11e.(2) Byproduct Material Disposal Site and Facility Inspection Program

IP 37001 10 CFR 50.59 Safety Evaluation Program
IP 87654 Uranium Mill Site Decommissioning Inspection
IP 88001 On-site Construction
IP 89001 In-Situ Leach (ISL) Facilities

3. INTERACTIONS WITH OTHER FEDERAL AGENCIES

MC 1007 Interfacing Activities between Regional Offices of NRC and OSHA

IP 87102 Maintaining Effluents from Materials Facilities As Low As Is Reasonably Achievable (ALARA) [EPA][1]

4. RADIATION PROTECTION

MC 8300 Radiation Protection

IP 83726 Control of Radioactive Materials and Contamination, Surveys, and Monitoring
IP 83728 Maintaining Occupational Exposures ALARA
IP 83750 Occupational Radiation Exposure
IP 83822 Radiation Protection

5. TRANSPORTATION

MC 1330 Response to Transportation Accidents Involving Radioactive Materials

IP 86721 Transportation (Basic)
IP 86740 Inspection of Transportation Activities
IP 86750 Solid Radioactive Waste Management and Transportation of Radioactive Materials

6. OTHER

MC 1010 Independent Assessment and Analysis
MC 1100 Notification of Significant Meetings
MC 1201 Conduct of Employees
MC 2900 Performance Appraisal Program

B. The First Line Supervisor will hold discussions, interviews, or oral quizzes to test the qualifying individual's knowledge and understanding of the application of the selected references to the Uranium Recovery program.

Qualification Guide 6
Industry Codes and Standards

A. A selection of currently applicable industry codes and standards should be identified by the First Line Supervisor. The qualifying individual should be expected to have a general knowledge of the topics

addressed in the references. This review may be accomplished by self study, study quizzes, briefings, or discussions. Standards selected should be documented by the First Line Supervisor

B. The First Line Supervisor should test the qualifying individual's knowledge of application of these codes and standards to the Uranium Recovery program by discussions, interviews, or oral quizzes.

Qualification Guide 7
Inspection Accompaniments

A. Each inspector should accompany certified inspectors on at least four inspections. At least two of these inspections should be performed at a facility other than the designated lead facility.

B. The following is a guide for material that should be studied and discussed with the inspector in charge during these inspection accompaniments. The First Line Supervisor will discuss these items, as appropriate, following each inspection accompaniment.

1. The Inspection Program

MC 2620 On-Site Construction Reviews of Remedial Actions at Inactive Uranium Mill Tailings Sites (Title I UMTRCA)

MC 2641 In-Situ Leach Facilities Inspection Program

MC 2801 Uranium Mill and 11e.(2) Byproduct Material Disposal Site and Facility Inspection Program

2. Scheduling and Preparation for Inspections

MC 0300 Announced and Unannounced Inspections

3. Scope of Inspection

4. Entrance/Exit Interviews

5. Conduct of Inspection, Accumulation of Data

6. Post-inspection Activities of Inspectors

MC 0610 Inspection Reports

MC 0620 Inspection Documents and Records

MC 1100 Notification of Significant Meetings

7. Morning Reports

MC 0230 Morning Report

8. Non-routine Licensee Events

MC 1110 Potential Abnormal Occurrences

IP 90714 Nonroutine Reporting Program

Management Directive 8.3 NRC Incident Investigation Program

Management Directive 8.9 Accident Investigation

9. Preliminary Notification

MC 1120 Preliminary Notifications

10. Bulletins/Information Notices

MC 0720 NRC Bulletins and Information Notices

MC 0730 Generic Communications Regarding Materials and Fuel Cycle Issues

11. Use of Consultants of NRC

MC 1360 Use of Physician and Scientific Consultants in the Medical Consultant Program

Management Directive 10.6 Use of Consultants & Experts

12. Allegations and Investigations

Management Directive 8.8 Management of Allegations

13. Communication outside NRC

MC 1007 Interfacing Activities Between Regional Offices of NRC and OSHA

Management Directive 5.5 Public Affairs Program

Management Directive 3.6 Distribution of Unclassified NRC Staff/Contractor-Generated Reports

Qualification Guide 8
NRC Management Directives

A. A selection of currently applicable NRC Management Directive (MD) references should be identified by the First Line Supervisor. These references should include those listed below and be documented. The qualifying inspector should be expected to have a general knowledge of the topics addressed in the references. This review may be accomplished by self-study, study-quizzes, briefings, or discussions. The selection should include:

1. NRC MD 9.1 Organization Management

2. NRC MD 9.29 Organization and Function of Regional Offices

3. NRC MD 3.2 Privacy Act

4. NRC MD 3.1 Freedom of Information Act

5. NRC MD 10.130 Safety and Health Program Under the Occupational Safety and Health Act

6. NRC MD 10.131 Protection of NRC Employees Against Ionizing Radiation

7. NRC MD 14.1 Official Temporary Duty Travel

8. NRC MD 10.159 Differing Professional Views or Opinions

9. NRC MD 10.42 Hours of Work and Premium Pay

10. NRC MD 10.43 Time and Attendance Reporting

11. NRC MD 10.67 Non-SES Performance Appraisal System

12. NRC MD 10.101 Employee Grievances

13. NRC MD 8.3 NRC Incident Investigation Program

14. NRC MD 8.8 Management of Allegations

15. NRC MD 4.6 License Fee Management Program

16. NRC MD 5.1 Intergovernmental Consultation

17. NRC MD 5.2 Memorandum of Understanding With States

18. NRC MD 5.5 Public Affairs Program

19. NRC MD 8.11 Review Process for 10 CFR 2.206 Petitions

20. NRC MD 10.5 Oath of Office

21. NRC MD 10.160 Open Door Policy

B. Application of the selected NRC Management Directives to the Uranium Recovery program will be discussed with the qualifying individual by the First Line Supervisor to test the qualifying individual's knowledge.

Qualification Guide 9
Review of Significant Uranium Recovery Events

A. A selection of significant historical related events should be identified by the First Line Supervisor. These events should be documented and studied in detail by the qualifying individual.

B. The First Line Supervisor should discuss the selected events in detail with the qualifying individual and go over recommendations made, lessons learned, and changes identified to prevent recurrence. The relevance of the event to the Uranium Recovery program should be stressed.

Qualification Guide 10
Formal Training

The standards for each Training Course are provided in the NRC Technical Training Division Course Catalog and will not be duplicated in the Qualification Guide.

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1. Required for non-sealed source licensees

Issue Date: 01/05/01

Section XIII: Training Requirements For Uranium Recovery Project Manager/technical Reviewer

A. Applicability

The training described below is required for all uranium recovery project manager/technical reviewers assigned to perform project management and technical reviews of licensing actions on Source Material Licenses.

B. Training

1. Required Initial Training

a. Self Study and On-the-Job Training

(1) NRC Orientation

(2) Code of Federal Regulations

(3) Office Instructions

(4) Regulatory Guidance

(5) NRC Management Directives

(6) Directed Review of Selected Licensing Casework

(7) Formal Training (and Other Specialized Training and/or Courses)

b. Core Training. These courses establish minimum formal classroom training requirements. Refer to Section 1246-11 for exceptions to these requirements.

(1) Licensing Practices and Procedures (G-109)

(2) NMSS Radiation Worker Training (H-102)

(3) General Health Physics Practices for Uranium Recovery (F-104) or General Health Physics Practices for Fuel Cycle Facilities Directed Self-Study Course (F-102S)

(4) Environmental Impact Assessment (Form 368)

c. Specialized Training. Depending on the employee's previous work experience and planned activities, additional courses may be required in order to gain knowledge necessary for specialized licensing activities. Management will make this determination on an individual basis.

2. Supplemental Training. Additional training beyond that identified as Core Training. This training will be determined by the individual's supervisor and will depend on the individual's previous work experience and planned licensing activities in specific areas.

3. Refresher Training. Refresher training will be conducted every three years following initial certification. Refresher training will be determined by management on a case-by-case basis.

END