

**PUBLIC PARTICIPATION SUMMARY**  
**for the**  
**Modification to the**  
**Ground Water Quality Discharge Permit No. UGW370004**  
**and the**  
**Amendment to the**  
**Radioactive Materials License No. UT1900479**  
**Denison Mines (USA) Corp**  
**White Mesa Uranium Mill**  
**San Juan County, Utah**  
**June 14, 2010**

**Table of Contents**

Abbreviations and Acronyms .....	2
Introduction .....	3
Section 1. Written Comments from Sarah Fields, Uranium Watch, Program Director and Related Oral Comments.....	6
Section 2. Oral Only Comments from Public Hearing Held May 4, 2010 in Blanding, Utah .....	19
Section 3. Sundry Changes to Permit and License .....	23
References Cited.....	24
Appendix A; Written Comments Provided to Utah Division of Radiation Control	
Appendix B; Transcript of Public Hearing Held May 4, 2010 at Blanding, Utah	
Appendix C; Revised Radioactive Materials License No. UT 1900479	
Appendix D; Revised Ground Water Discharge Permit No. UGW 370004	

**Abbreviations and Acronyms**

ALARA	As Low As Reasonably Achievable
Ci	Curie
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DUSA	Denison Uranium Mines (USA) Corp.
Division	Utah Division of Radiation Control
DRC	(Utah) Division of Radiation Control
EPA	U.S. Environmental Protection Agency
GWDP	Ground Water Discharge Permit
LC	License Condition
LRA	License Renewal Application
m	meter
mrem	millirem
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NRC	U.S. Nuclear Regulatory Commission
OSHA	U.S. Occupational Safety and Health Administration
SER	Safety Evaluation Report
SHPO	State Historic Preservation Office
TEDE	Total Effective Dose Equivalent
U <sub>3</sub> O <sub>8</sub>	Triuranium octoxide; yellowcake
URCB	Utah Radiation Control Board
URCR	Utah Radiation Control Rule
URS	URS Corporation
V <sub>2</sub> O <sub>5</sub>	Vanadium (pent)oxide

**Introduction**

The purpose of this document is to summarize public comments received by the Utah Division of Radiation Control (DRC) regarding Denison Mines (USA) Corp.'s (DUSA) request to amend their Radioactive Materials License and Ground Water Discharge Permit by authorizing construction of Cell 4B at its White Mesa Uranium Mill located near Blanding, Utah. One letter containing a set of written comments was received from the public during the comment period that ended on May 10, 2010. Several individuals made oral comments at the public hearing held on May 4, 2010 at the Blanding Arts and Events Center in Blanding, Utah.

The topics addressed in public comments received by the DRC (including both oral and written comments) are summarized in Table 1. These represent general categories that the comments were organized into. Unique designators (i.e., PC-01 through PC-20) are associated with each topic in Table 1. The written comments are addressed first, followed by the oral comments. DRC responses follow below.

<b>Table 1. Summary of Topics Addressed in Comments Received by DRC.</b>					
<b>Topic</b>	<b>Commenter</b>				
	<b>Sarah Fields<sup>1</sup></b>	<b>Bradley Angel<sup>2</sup></b>	<b>Toni Turk<sup>2</sup></b>	<b>Chris Webb<sup>2</sup></b>	<b>Joe Lyman<sup>2</sup></b>
<b>Written and Related Oral Comments Received</b>					
PC-01: Archaeological and Cultural Resources	X	X	X	X	
PC-02: Need to Revise License Condition 9.7 and Associated Memorandum of Understanding	X				
PC-03: Effluent/Monitoring Reports Should be Made Available on DRC Website in Timely Manner	X				
PC-04: Address Long-Term Impacts	X				
PC-05: Permanent Isolation without Maintenance	X	X			
PC-06: Potential for Releases of Radon, Other Gases, and Hazardous and Radioactive Particulates from Impoundment during Dewatering	X	X			
PC-07: Off Site Measuring Devices	X				
PC-08: Effluent Control during Operations	X				

<sup>1</sup> Both written and oral comments.

<sup>2</sup> Oral comments made at Public Hearing held in Blanding, Utah on May 4, 2010. For a transcript of this meeting, see Appendix B, below.

<b>Table 1. Summary of Topics Addressed in Comments Received by DRC.</b>					
<b>Topic</b>	<b>Commenter</b>				
	<b>Sarah Fields<sup>1</sup></b>	<b>Bradley Angel<sup>2</sup></b>	<b>Toni Turk<sup>2</sup></b>	<b>Chris Webb<sup>2</sup></b>	<b>Joe Lyman<sup>2</sup></b>
PC-09: Communication/Consultation with White Mesa Ute Tribe	X		X		
PC-10: Compliance with Other Federal and State Regulations	X		X		
<b>Oral Only Comments Received in May 4, 2010 Public Meeting</b>					
PC-11: Adequate/Inadequate Notice of Public Hearing Provided to General Public and to Members of the White Mesa Ute Tribe		X	X		X
PC-12: Yellowcake Release from Stacks		X			
PC-13: Social Justice		X			
PC-14: Rules Should Be Changed/Use Current Rules When Considering this License Amendment	X			X	
PC-15: Economic Benefit and Employment Provided by Mill Operations			X		X
PC-16: DUSA Is Responsible and Professional			X	X	X
PC-17: Balance in Preserving Archaeological Resources			X		
PC-18: Health and Safety Are Important				X	
PC-19: Confidence in State and Federal Regulators				X	
PC-20: Release of Radioactive Materials to the Environment		X			

The DRC considered all written and oral comments in assessing whether changes should be made to the proposed revisions to DUSA's Radioactive Materials License and Ground Water Discharge Permit (found at: [http://www.radiationcontrol.utah.gov/Uranium\\_Mills/IUC/cell4b/permitMod\\_licenseAmend.htm](http://www.radiationcontrol.utah.gov/Uranium_Mills/IUC/cell4b/permitMod_licenseAmend.htm)). No comments were submitted that would necessitate a change to the Safety Evaluation Report (SER) or Statement of Basis (SOB). Each written comment received is restated below verbatim in italics, and is found in Appendix A. Oral comments are presented in summary form, and a transcript is found in Appendix B. DRC's response and disposition follow each comment, and is denoted with the words "**Division Response**" in bold text.

Public Participation Summary  
June 14, 2010

Revisions made to April 6, 2010 Draft DUSA's Radioactive Material License, No. UT 1900479 are shown in Appendix C. Revisions made to April 6, 2010 Draft DUSA's Ground Water Discharge Permit No. UGW370004 are shown in Appendix D. These changes are discussed in Section 3, below.

**Section 1. Written Comments from Sarah Fields, Uranium Watch, Program Director and Related Oral Comments**

Ms. Fields submitted the following comments in writing to the DRC on May 10, 2010. Other commenters also provided oral comment on several of these same topics during the May 4, 2010 public meeting. For details, see written comments in Appendix A and the transcript of oral comments in Appendix B, below.

***PC-01; Archaeological Resources***

Written comments from Ms. Fields (Comment 1.1, pp. 1-2) stated the following (Appendix A, pp. 1-2): "*1. WHITE MESA ARCHAEOLOGICAL RESOURCES*

*1.1. The construction of Cell 4B will impact a number of Archaeological Resources at the Mill site and in the White Mesa Archaeological District. White Mesa is in an area adjacent to and in the vicinity of extensive tribal holdings and an area rich in archaeological resources, which have been designated as significant and deserving of preservation. Many Archaeological Resources on White Mesa have been found eligible for the National Register, including resources that will be or have been impacted by activities associated with the proposed license amendment.*

*The Licensee and the Utah Division of Radiation Control (DRC) have not complied with the requirements of License Condition 9.7, which states, in pertinent part:*

*'All disturbances associated with the proposed development will be completed in compliance with the National Historic Preservation Act (as amended) and its implementing regulations, and the Archaeological Resources Protection Act (as amended) and its implementing regulations.'*

*Compliance with the National Historic Preservation Act includes compliance with Section 106. The Safety Evaluation Report (SER) fails to discuss how the Applicant fulfilled its responsibilities under the National Historic Preservation Act (as amended) and its implementing regulations, and the Archaeological Resources Protection Act (as amended) and its implementing regulations.*

*A contractor to the licensee has commenced excavation of the Archaeological Resources at the Mill, with approval of the DRC. However, excavation has commenced without the any Section 106 consultation. The excavation of the valuable Archaeological Resource on White Mesa has taken place without informing and consulting with nearby tribal governments and tribal Historic Preservation Officers and without an opportunity for public comment.*

*Further, the Licensee commenced activities that have impacts on the Archaeological Resources and are the subject of License Condition 9.7 requirements prior to this comment period and prior to the issuance of the license amendment and final environmental evaluation.*

*All activities that impact Archaeological Resources at the Mill should cease until DRC initiates and completes a Section 106 consultation process, including consultation with affected tribal governments or appropriate tribal representatives. The DRC should not issue the license amendment without consulting with the Ute, Navajo, and other regional*

*tribal Historic Preservation Officers regarding the destruction of irreplaceable historic resources.*

*Further, the SER must include a discussion of how the Applicant has complied with the provisions of License Condition 9.7.”*

In oral comments, Ms. Fields stated that archaeological excavation is currently taking place at over ten archaeological sites and reported that most of the archaeological sites on White Mesa are ancient pit houses (see Appendix B, p. 16). Ms. Fields reported that at the initial construction of the White Mesa mill and facility, ancient artifacts were removed and placed in the University of Utah or the Edges of the Cedars (museum). Ms. Fields complained, however, that none of these artifacts have been exhibited, no studies have been conducted, and no results presented, and asserted that although artifacts have been and will be removed, the sites have been and will be destroyed by mill construction and expansion.

In oral comments, another person (Toni Turk, Mayor of Blanding) indicated that all of the artifacts that are recovered and recovered according to archeological procedure are made available for further research at the Edge of the Cedars Museum (see Appendix B, p. 12). He also indicated that the [Blanding] Rotary Club recently received a detailed presentation of recovery of archaeological knowledge that Denison Mines has funded (see Topic *PC-09; Communication/Consultation with White Mesa Ute Tribe*, below, for further discussion).

**Division Response:** Substantive Comment.

The Utah Radiation Control Act contains no requirement that mandates that the DRC address the evaluation or preservation of archaeological resources. However, the License Condition 9.7 does address archaeological resources.

The Executive Secretary disagrees with the comment that under License Condition 9.7 the Utah DRC must undertake Section 106 consultations pursuant to the National Historic Preservation Act, 16 U.S.C. § 470f<sup>3</sup>. By its terms, Section 106 applies to actions by “any Federal agency” having jurisdiction over a proposed “Federal or federally assisted undertaking”. As the “undertaking” at issue here is licensing of disposal Cell 4B by a State of Utah agency, Section 106 consultation is inapplicable. Nonetheless, the DRC has required the licensee to take all necessary and appropriate steps to identify and preserve cultural resources that may be unavoidably disturbed during the construction of Cell 4B.

Consistent with License Condition 9.7, the licensee arranged for archaeological cultural research studies of the Cell 4B area. As part of these studies, Abajo Archaeology developed “A Research Design for Archaeological Data Recovery on Ten Sites in the White Mesa Mill Cell 4B Project Area, San Juan County, Utah” (hereafter “Abajo Research Design”). The Abajo Research Design describes archaeological test excavations of ten sites in the Cell 4B project area; provides a research design for archaeological data recovery at those sites; and commits to the preservation of artifacts from the site.

---

<sup>3</sup> Condition 9.7 in DUSA’s Utah license is a remnant from its federal U.S. NRC mill license. When the U.S. NRC delegated licensing of uranium mills to Utah in August 2004, Condition 9.7, as drafted by the U.S. NRC, was imported into the Denison Mine’s Utah license.

Public Participation Summary  
June 14, 2010

The Executive Secretary sent the Abajo Research Design to the Utah State Historic Preservation Office, who responded: “We concur that the approach outlined in the research design prepared by Abajo Archaeology will mitigate adverse effects resulting from this project” (see Letter from Lori Hunsaker, Deputy State Historic Preservation Officer - Archaeology to Dane Finerfrock, Director, Division of Radiation Control, dated December 17, 2009).

To fulfill the requirements of License Condition 9.7, DUSA:

- Is following the Abajo Research Design prior to beginning construction in any affected cultural resource area identified in that document;
- As described in the Abajo Research Design, will require “Abajo Archaeology to submit all artifacts and associated files from the project to the Edge of the Cedars Museum. All artifacts will be housed in archival materials, including artifact bags and boxes as stipulated by the Edge of the Cedars.” Abajo Research Design at p.94.
- When excavation and preservation of cultural resources are complete, will submit a final archaeology report to the Executive Secretary outlining the steps it took to comply with the Abajo Research Design. It is anticipated that this report will be available by the end of July 2011.

See Letter from DUSA to the Executive Secretary, dated June 8, 2010 (DUSA 2010).

Various archaeological documents relating to the construction of Cell 4B are accessible to the public on the DRC website. In addition, the public may request paper copies of these documents and/or inspect files at the DRC, which contain current and historic archaeological documents relating to the White Mesa Mill site.

Copies of DUSA, DRC, and SHPO correspondence, plans, and reports documenting the ongoing archaeological investigations and recovery work are posted on the DRC website at [http://www.radiationcontrol.utah.gov/Uranium\\_Mills/IUC/cell4b/cultural\\_resources4b.htm](http://www.radiationcontrol.utah.gov/Uranium_Mills/IUC/cell4b/cultural_resources4b.htm).

***PC-02; License Condition 9.7***

A written comment from Ms. Fields (Comment 1.2) stated the following (Appendix A, p. 2):

*“1.2 LICENSE CONDITION 9.7*

*The DRC is not proposing any changes to License Condition 9.7, which pertains to the cultural resources at the Mill. License Condition 9.7 refers to a Memorandum of Agreement (MOU) between the Utah State Historical Preservation Officer (SHAPO), the Advisory Council on Historic Preservation (ACHP) the Nuclear Regulatory Commission (NRC), and Energy Fuels Nuclear, Inc. (a former Mill owner/licensee). The MOU was ratified on August 20, 1979, and amended on May 3, 1983. The MOU should be amended or replaced, since it does not reflect the current situation at the Mill.”*

In oral comment, Ms. Fields asserted the LC 9.7 should be stricken from the license and later that the license condition should be reviewed and brought up to date (see Appendix B, p. 18).

**Division Response:** Non-substantive Comment.

DRC agrees there may be opportunities for improvement to the wording found in LC 9.7. License Condition 9.7 may be updated as part of the ongoing review of the license renewal application.

***PC-03; Licensee Reporting Responsibilities***

A written comment from Ms. Fields (Comment 2.1) stated the following (Appendix A, pp. 2–3):

*“2. SAFETY EVALUATION REPORT (SER)*

*2.1 LICENSEE REPORTING RESPONSIBILITIES (SER, PAGE 21)*

*The DRC should make the effluent monitoring reports, Semi-Annual Effluent Reports and Quarterly Groundwater Monitoring Reports and any additional effluent monitoring information submitted by the licensee pursuant to License Condition 11.2 available on the DRC website in a timely manner.”*

Ms. Fields requested in oral comments that the DRC make the effluent monitoring reports and any additional effluent monitoring information submitted by the licensee pursuant to LC 11.2 available on the DRC’s website (see Appendix B, p. 18).

**Division Response:** Non-substantive Comment.

The DRC is currently undergoing an initiative to make documents more readily and more rapidly available to the public on the DRC’s website. In the interim, interested parties can request information that is not currently available on the DRC’s website through the existing Utah Government Records Access and Management Act (GRAMA) records request processes in Utah Code Annotated Title 63G, Chapter 2 or inspect the files at the DRC.

***PC-04; Long-Term Impacts***

A written comment from Ms. Fields (Comment 2.3)<sup>4</sup> stated the following (Appendix A, pp. 3–4):

*“2.3 LONG TERM IMPACTS*

*UCA R313-24-3D: Environmental Analysis - Long Term Impacts, Safety Evaluation, states that, pursuant to UAC R313-24-3, a major license amendment should include "consideration of the long-term impacts." The SER discussion addresses long-term impacts. However, the SER and the UCA section do not define long-term and leave the issue of long-term containment of the mill tailings and their associated emissions to be addressed in a future Reclamation Plan. Under current federal regulation (40 C.F.R. Sec. 192.32(B)(1)(i)<sup>5</sup>), consideration of the technical requirements for long-term containment of the tailings is limited to "one thousand years, to the extent reasonably achievable, and, in any case, for at least 200 years." The SER (page 30) states that Cell 4B has been designed to provide "reasonable assurance that radiological hazards will be suitably controlled for 1,000 years, to the extent reasonably achievable, and in any case for at least 200 years.*

---

<sup>4</sup> sic. Ms. Fields May 10, 2010 submittal did not contain any comment numbered 2.2.

*“So, we have "reasonable assurance" to the extent that suitable control is "reasonably achievable." What does this vague language mean over the long-term? The public, the licensee, and the DRC do not really know.*

*“The tailings will remain on White Mesa in perpetuity, that is, forever. Therefore impacts from 200 to 1,000 years are short-term impacts, not long-term impacts, given the time that the tailings will continue to release radon and will be a radioactive and hazardous material requiring physical and regulatory control for as long as there are individuals and entities capable of exercising that control.*

*“Eventually the liners will break down, eventually the tailings cover will erode, and eventually the tailings and the associated radioactive and non-radioactive contaminants will disperse into the air, water, and soils.*

*“Any evaluation of the long-term impacts of the proposed licensing action must address the potential impacts of the dispersion of the tailings from natural forces over the thousands and millions of years that the tailings will remain in place.”*

---

<sup>1</sup> 40 CFR Sec. 192.32(B)(1)(i).

*(1) Disposal areas shall each comply with the closure performance standard in Sec. 264.111 of this chapter with respect to nonradiological hazards and shall be designed to provide reasonable assurance of control of radiological hazards to (i) Be effective for one thousand years, to the extent reasonably achievable, and, in any case, for at least 200 years, and, (ii) Limit releases of radon-222 from uranium byproduct materials to the atmosphere so as to not exceed an average release rate of 20 picocuries per square meter per second (pCi/m<sup>2</sup>s).*

*∅ This average shall apply to the entire surface of each disposal area over periods of at least one year, but short compared to 100 years. Radon will come from both uranium byproduct materials and from covering materials. Radon emissions from covering materials should be estimated as part of developing a closure plan for each site. The standard, however, applies only to emissions from uranium byproduct materials to the atmosphere.”*

In oral comments, Ms. Fields asserted that the DRC is required to prepare a Safety Evaluation Report (SER) for a major license amendment under the Atomic Energy Act (see Appendix B, pp. 21-22). The person also observed that the Atomic Energy Act has specific requirements for agreement states and that the State of Utah is an agreement state, through which the federal government has given the State of Utah the responsibility for regulating uranium mills within Utah. The commenter observed that SER states that Cell 4B has been designed to provide reasonable assurance that radiological hazards will be suitably controlled for 1,000 years to the extent reasonably achievable, and in any case, for at least 200 years. The person the expressed the common belief that although the tailings will remain in perpetuity, the containment features and system will eventually degrade to allow radioactive and non-radioactive contaminants to be released into the environment. This person then asserted that DRC should consider the performance of the tailings impoundments for up to 100,000 years.

**Division Response:** Substantive Comment.

The DRC reviews license applications for tailings management and tailings reclamation facilities in accordance with existing established regulations and rules, including UAC R313-24, as mentioned in the comment. The set of standards established for stabilization of reclaimed tailings

management cells that are applicable to the DUSA White Mesa Mill Facility is prescribed by the NRC in 10 CFR 40, including Criterion 6(1), of those regulations:

*“In disposing of waste byproduct material, licensees shall place an earthen cover (or approved alternative) over tailings or wastes at the end of milling operations and shall close the waste disposal area in accordance with a design which provides reasonable assurance of control of radiological hazards to (i) be effective for 1,000 years, to the extent reasonably achievable, and, in any case, for at least 200 years, and (ii) limit releases of radon-222 from uranium byproduct materials, and radon-220 from thorium byproduct materials, to the atmosphere so as not to exceed an average release rate of 20 picocuries per square meter per second (pCi/m<sup>2</sup>s) to the extent practicable throughout the effective design life determined pursuant to (1)(i) of this Criterion. In computing required tailings cover thicknesses, moisture in soils in excess of amounts found normally in similar soils in similar circumstances may not be considered. Direct gamma exposure from the tailings or wastes should be reduced to background levels. The effects of any thin synthetic layer may not be taken into account in determining the calculated radon exhalation level. If non-soil materials are proposed as cover materials, it must be demonstrated that these materials will not crack or degrade by differential settlement, weathering, or other mechanism, over long-term intervals.”*

The regulatory basis for the NRC environmental standards was provided by the Environmental Protection Agency (EPA) in documents published in 40 CFR Part 192. The NRC adopted these environmental standards in the Federal Register in 1983. In the Federal Register Notice describing the NRC basis for adopting these standards under 40 CFR Part 192 (“Environmental Standards for Uranium and Thorium Mill Tailings at Licensed Commercial Processing Sites,” Proposed Rule, published in Federal Register 48(84):19584-19603, April 29, 1983), EPA notes (ibid., p. 19,597) that the selected design alternative (Alternative D – stabilization to be designed to be effective for 1,000 years, to the extent practicable, or, in any case [designed to be effective] for at least 200 years) “will provide stability against erosion and casual intrusion for misuse for much longer than 1,000 years” except for “those few piles that are susceptible to flood damage,” which “would be protected for at least 200 years, and are unlikely to suffer real damage for much longer.” EPA also identifies that casual intrusion by man is limited by thick and hard-to-penetrate covers, and that the main design issue is protection against natural forces (wind and surface water erosion, and of the possibility of flood damage). They indicate that wind and surface-water erosion are well-understood and predictable, and are easily inhibited through the use of rock or, in some cases, vegetative surface stabilization.

When reviewing documents submitted by Licensees that relate to construction, operations, and reclamation activities that are proposed to be conducted at the White Mesa Mill Facility with respect to the potential for these activities to cause long-term environmental impacts, the DRC must consider and has considered requirements contained in the above set of NRC standards.

Interested parties, should they choose to do so, have the option of requesting that changes to existing rules and statutes be considered and implemented. Such requests would need to be pursued through established formal rule-making requests to the Utah Radiation Control Board and/or to the NRC, or by a State or Federal legislative processes.

***PC-05; Permanent Isolation without Ongoing Maintenance***

A written comment from Ms. Fields (Comment 2.4) stated the following (Appendix A, p.4):

*“2.4 PERMANENT ISOLATION WITHOUT ONGOING MAINTENANCE (SER, PAGE 24)*

*10 CFR Part 40, Appendix A, Criterion 1, states that tailings should be disposed of in a manner that no active maintenance is required to preserve conditions of the site.*

*“There is no doubt that over the years, active maintenance will be required to preserve conditions of the site. The Department of Energy (DOE) has already discovered that active maintenance is required at some of the uranium mill sites that have been reclaimed and that DOE have responsibility for, due to erosion. The DOE is actively looking at different cover and tailings design systems because of the problems they have encountered at these sites.*

*“No matter what the design is, eventually the cover, tailings, and White Mesa itself, will erode, as demonstrated by the geological landscape in the region. Any claim to continued long-term isolation of the tailings--without active maintenance--via a man-made design is not supportable.*

*“The DRC should consult with the DOE and the Nuclear Regulatory Commission and take into consideration recent studies and data regarding the effectiveness of tailings system designs and materials to update the final cover design and materials requirements in order to achieve the maximum long-term isolation of the tailings with minimal maintenance. The DRC should not mislead the public and licensee into thinking that isolation of the tailings for 1,000 and for the long-term future can take place without active maintenance.”*

Ms. Fields also expressed doubt in oral comments presented at the Public Hearing that tailings could be isolated without relying on ongoing maintenance and recommended that DRC should consult with NRC and Department of Energy to identify realistic long-term maintenance scenarios and to take advantage of new data and information that is being generated (see Appendix B, pp.23-24).

**Division Response:** Substantive Comment.

We agree with the comment that the NRC rules mandate uranium mill tailings facilities be designed and constructed such that no ongoing maintenance is required (10 CFR 40, Appendix A, Criterion 1). As mentioned above, the 200 to 1000-year engineering design / stability standard is found in the NRC rules (10 CFR 40, Appendix A, Criterion 6). Both of these requirements are adopted in the corresponding Utah regulations (see UAC R313-24-4). Upon closure of the facility, and completion of certain other requirements, the site will be transferred to the DOE who will then take control and possession of the tailings site (see 10 CFR 40.28). Under this ownership, the federal government will provide any long-term maintenance required.

The DUSA reclamation plan is currently under review by the DRC as a part of the license renewal process. During this review, the DRC will consider available information on the performance of other completed final cover systems, including covers constructed at DOE reclamation sites (e.g., U.S. DOE Uranium Mill Tailings Reclamation Act Project sites and other

sites), and published NRC guidance documents relating to the final capping and closure of uranium mill tailings impoundments, uranium tailings piles, etc..., for long-term stabilization, including, but not limited to, NUREG-1623 (NRC 2002), and documents referenced therein, and other published technical documents and reports that contain updated information regarding the design and expected longer-term performance effectiveness of final closure cover systems.

See also the response regarding established design requirements and standards provided in regard to the previous comment (Topic PC-04).

***PC-06: Impacts of Dewatering of the Tailings Cell***

A written comment from Ms. Fields (Comment 2.5) stated the following (Appendix A, pp. 4–5):

*“2.5 IMPACTS OF DEWATERING OF THE TAILINGS CELL (SER, PAGES 25–26)*

*The discussion of the permanent isolation without ongoing maintenance (10 CFR Part 40, Appendix A, Criterion 1) and the Reclamation Plan refer to the dewatering of the tailings cell after the operational life of the cell. However, there is minimal discussion about two of the primary problems encountered at uranium mills once operation has ceased and cell dewatering commences. Once dewatering commences, the result is an increase in the release of radon from the cell and an increase in windblown tailings. The SER mentions the possibility of the use of "platform fill," but provides little information and analysis of the use of fill or other means to minimize the emission of radon, hazardous and radioactive particulates to the atmosphere and the environment.*

*“The SER should discuss in more detail the impacts of cell dewatering on the emission of radon and other gases and hazardous and radioactive particulates and how these impacts will be mitigated during the estimated 5.5 years between the cessation of cell operation and the placement of an interim and final cover.”*

In addition to written comments dealing with release from the facility during dewater following cessation of milling operations, one person (Bradley Angel) provided an oral comment expressing concern for the potential windblown tailings during periods of high winds (see Appendix B, p. 26).

**Division Response:** Substantive Comment.

The applicant (DUSA) is required, on a yearly basis, to monitor for radon emissions from existing tailings cells. Applicable EPA regulations are specified in 40 CFR Part 61, Subpart W, National Emissions Standards for Radon Emissions from Operating Mill Tailings, with technical procedures in Appendix B. These standards are a subset of the National Emission Standards for Hazardous Air Pollutants (NESHAPs). According to subsection 61.252, Standard, (a) radon-222 emissions to ambient air from an existing uranium mill tailing pile shall not exceed an average of 20 picoCuries per square meter per second (20 pCi/m<sup>2</sup>-s) for each pile or region (emphasis added). The term “existing” tailings pile is defined as a cell that was in existence on or before December 15, 1989 [see 40 CFR 61.251(d)]. Cell 4B does not meet this requirement.

It is also important to note EPA’s intent in 40 CFR 61 Subpart W, wherein the 20 pCi/m<sup>2</sup>/sec air quality standard was applied to “existing” tailings cells, and new design, construction, and operation standards applied to “new” tailings cells (built after December 15, 1989). For the “new”

tailings cells, the operator was required to design, construct and operate the cells under one of two practices:

- 1) conduct phased tailings disposal in a cell area that is less than 40 acres, and have no more than two tailings impoundments in operation at any one time (including “existing” impoundments), or
- 2) continuous disposal of tailings that are dewatered and immediately disposed of with no more than 10 acres uncovered at any time, in accordance with the requirements of 40 CFR 192.32(a), as determined by the NRC.

In the case of DUSA, the company has elected to operate Cells 4A and 4B under Option 1, above.

With regard to NESHAPs, Subsection 61.253, Determining Compliance, states that, “Compliance with the emission standard in this subpart shall be determined annually through the use of Method 115 of Appendix B.” This monitoring is performed by DUSA on (ibid., Section 2.1.2): 1) water saturated tailings (or beaches), and 2) dry top surface areas.

The results of the annual radon measurements are reviewed and facility compliance status is determined by the Utah Division of Air Quality (DAQ). While informal review of this data is done by DRC staff, the DRC does not have authority to enforce DAQ / NESHAPs requirements. However, in the event that DAQ determined there to be non-compliance with NESHAPs requirements, DUSA could pursue more than one alternative to control radon emissions, including, but not limited to: construction of a temporary cover soil, or the final radon barrier. Certainly, any radon barrier construction is subject to the DRC regulations, and to the requirements found in License Condition 9.11 and the approved Reclamation Plan. During such construction, DRC staff would be involved in construction inspections, and review of any As-Built or Closure Report.

Historic DUSA radon emission rate data collected from tailings management Cells 2 and 3 at the White Mesa Facility could be considered representative of expected future radon emission rates from proposed Cell 4B. The average radon flux measured for the covered Cell 2 area during 2009 was 13.7 pCi/m<sup>2</sup> per second. This assumption is reasonable, given the similarity of tailings materials and operations. The areas (surface size) measured atop Cell 3 will be variable during tailings management operations as a result of operations and therefore measured radon emission rates may vary, depending on the time of measurement. Radon emission rates obtained during 2007, 2008, and 2009, have been reported by DUSA for both exposed (“beach”) and soil-covered tailings materials in “existing” Cell 2 and 3 (at the top of the interim cover soil layer placed over the tailings). Reported average radon emission rates for the soil-cover areas measured during the 2007 to 2009 period are 13.9, 5.5, and 4.5 pCi/m<sup>2</sup> per second, respectively. Average emission rates reported for the beach areas measured in 2007, 2008, and 2009, are 6.7, 12.2, and 19.1 pCi/m<sup>2</sup> per second. The geometric mean radon emission rate for the 2007-2009 monitoring period was 9.65 pCi/m<sup>2</sup> per second for the “soil cover” areas, and 7.01 pCi/m<sup>2</sup> per second for the beach areas (see the annual NESHAPs Radon Flux Measurement Program reports prepared by Tellco Environmental. All of these DUSA measured concentrations are compliant with the NESHAPs standard (20 pCi/m<sup>2</sup>/sec). An example Annual NESHAPs report is the National Emission Standards for Hazardous Air Pollutants 2009 Radon Flux Measurement Program White Mesa Millsite Report, prepared by Tellco Environmental, submitted to DUSA on February 17, 2010 (Tellco Environmental 2010).

On the question of radioactive particulates, the site is monitored on a continuous basis at five (5) monitoring stations around the site. These monitoring stations monitor all emissions released from the site including the tailings impoundments.

Radioactive particulate monitoring results can be found in Semi-Annual Effluent Monitoring Reports and in the annual NESHAPs Radon Flux Measurement Program reports). Radon monitoring at the restricted area (RA) boundary was discontinued in 1995, after NRC approval (see August 29, 2009 DUSA report, p. 5). In lieu of actual radon measurements at the RA boundary, the NRC allowed DUSA to determine radon concentrations in air with a calculation method (ibid.). This same approach is also allowed under Part 15 of the Utah Radiation Control Regulations [see UAC R313-15-302(2)(a)].

It is also worth noting that the direct measurement of the radon flux from uranium tailings is not required by current guidance from the Nuclear Regulatory Commission (NRC). NRC requirements are presented in Regulatory Guide 4.14, Revision 1, *Radiological Effluent and Environmental Monitoring at Uranium Mills*, April 25, 1980 (NRC 1980) and NUREG-1620 *Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act* (NRC 2000). The regulatory guide calls for pre-operational radon flux measurements to establish background flux, but does not require operational flux measurements in this guide. Instead, measurements are required at the end of the disposal cell's operational life, as it is prepared for closure, and after the radon barrier is installed.

#### ***PC-07; Off Site Measuring Devices***

A written comment from Ms. Fields (Comment 2.6) stated the following (Appendix A, p. 5):

##### *“2.6 OFF SITE MEASURING DEVICES*

*The February 12, 2010, letter to Dave Frydenlund, DUSA, from Senes Consultants Ltd., states (page 2): ‘Due to the inaccuracy of the radon measurement devices the mill is not required to sample for environmental radon under its license.*

*The Application for Cell 4B and the SER fail to provide supportive documentation regarding various types of radon measuring devices and their supposed “inaccuracy” to justify the failure to measure environmental radon from Cell 4 B and other radon sources at the Mill. This would include on- and off-site monitoring of radon.*

*The SER should include a full justification, with supporting documentation, of the on- and off-site radionuclide monitoring programs, including monitoring of radon. If DUSA is not required to sample for environmental radon and other radioactive releases on- and off-site, the public must know why and have supporting technical bases.”*

#### **Division Response: Substantive Comment.**

Radon effluent from the White Mesa Mill Site is calculated and not directly measured. This is in compliance with R313-15-302(2)(a), and was authorized by the NRC. The explanation is presented in the Semi-Annual Effluent Monitoring Reports as follows (e.g., see DUSA 2009, p. 5):

*“Due to unavailability monitoring equipment to detect the new 10 CFR 20 standard, and with the approval of the NRC, Radon-222 monitoring at BHV stations was discontinued*

*in 1995. Instead, Denison demonstrates compliance with these limits and the requirements of R313-15-301 by calculation, authorized by the NRC and as contemplated by R313-15-302(2)(a).....This calculation is performed by use of the MILDOS code for estimating environmental radiation doses for uranium recovery operations (Streng and Bender 1981) and more recently in 2003 by use of the updated MILDOS AREA code (Argonne 1998). The analysis under both the MILDOS and MILDOS AREA codes assumes the Mill to be processing high grade Arizona Strip ores at full capacity, and calculates the concentrations of radioactive dust and radon at individual receptor locations around the Mill.”*

The MILDOS and MILDOS AREA codes calculate the combined Total Effective Dose Equivalent (“TEDE”) from all relevant pathways, including both air particulate and radon, at a number of locations including the nearest residence (the individual likely to receive the highest dose from the licensed operation), approximately 1.6 miles north of the Mill. These calculations reveal projected doses to the individual likely to receive the highest dose from the licensed operations to be well below the 100 mrem regulatory limit in R313-15-301(1)(a) for all pathways, including air particulate and radon as set out in R313-15-101(4). MILDOS AREA modeling was recently conducted in support of the Mill’s 2007 License Renewal Application, utilizing the MILDOS-AREA code (Version 2.20β), to estimate the dose commitments at various receptor locations for processing of Colorado Plateau ore (0.25% U<sub>3</sub>O<sub>8</sub> and 1.5% V<sub>2</sub>O<sub>5</sub>) and Arizona Strip ore (0.637% U<sub>3</sub>O<sub>8</sub>). The process rate was assumed to be at full capacity of 730,000 tons per year (an average of 2,000 tons per day) with an average uranium recovery yield of 94%. That modeling showed a TEDE of 2 mrem per year at the nearest resident (3 mrem per year at the nearest potential residence, being the location of BHV-1 at the northern property boundary of the Mill site), which included the dose from all radionuclide sources, including radon. The modeled dose from radon itself was therefore a fraction of TEDE and well within regulatory limits.”

The January 1 through June 30, 2009 results can be found in the DUSA Semi-Annual Effluent Monitoring Report dated August 29, 2009 (DUSA 2009).

### ***PC-08; Effluent Control During Operations***

A written comment from Ms. Fields stated the following (Appendix A, p. 5):

#### *“2.7 EFFLUENT CONTROL DURING OPERATIONS (SER, PAGES 59 - 60)*

*The SER discusses compliance with 10 C.F.R. 40, Appendix A, Criterion 8, with respect to radioactive effluents from the mill and tailings impoundment. Criterion 8 includes the requirement:*

*“Milling operations producing or involving thorium byproduct material must be conducted in such a manner as to provide reasonable assurance that the annual dose equivalent does not exceed 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public as a result of exposures to the planned discharge of radioactive materials, radon-220 and its daughters excepted, to the general environment.’*

*“The SER fails to discuss how compliance with the above requirement for exposures to the public will be measured and compliance will be assured with respect to the release of the discharge of radioactive materials from Cell 4B and other sources at the mill during the operation of the tailings cell.*

*“The SER should explain exactly how the Applicant will demonstrate compliance with Criterion 8 with respect the emission from Cell 4B.”*

**Division Response:** Non-substantive Comment.

The cited requirement on radioactive effluents from the mill and tailings impoundment applies to facilities that produce thorium metal or beneficiate thorium ores, and as a result dispose of thorium byproduct materials. Because the White Mesa Uranium Mill Facility does not produce thorium, the cited requirements do not apply. No comparable requirement exists that applies to uranium milling or uranium byproduct disposal facilities.

***PC-09; Communication/Consultation with White Mesa Ute Tribe***

One person (Toni Turk) reported orally that the [Blanding] Rotary Club recently received a detailed presentation of recovery of archaeological knowledge that Denison Mines has funded. The presentation reported that the database of understanding of the cultures that have lived here anciently has been significantly expanded and that those artifacts that are recovered according to archaeological procedure are made available for further research at the Edge of the Cedars Museum.

One person (Ms. Fields) orally expressed a belief that the failure of the Division of Radiation Control and the failure of the Utah Historical Society to consult with the White Mesa Ute and the Ute Mountain tribal governments and the Navajo tribal historic preservation [under Section 106 of the National Historic Preservation Act] is unacceptable and that the Division of Radiation Control must consult with these entities before they approve the proposed license amendment (see Appendix B, pp. 17-18).

In written comments (Appendix A, p. 2), Ms. Fields asserted that excavation of valuable archaeological resources on White Mesa has taken place without informing and consulting with nearby tribal governments and tribal Historic Preservation Officers and without an opportunity for public comment.

One person (Toni Turk) stated in oral comments that one person who has worked very closely with the White Mesa Utes “is very computer literate and is able to receive and disperse all communications that pertain to that community and, to [his] knowledge, [she] does that...” (see Appendix B, pp. 11-12).

**Division Response:** Substantive Comment.

DUSA, SHPO, and DRC have addressed the issues involving preservation of archaeological resources as described in DRC’s response to Topic PC-01, above.

***PC-10; Compliance with Other Federal and State Regulations***

A written comment from Ms. Fields (Comment 2.8) stated the following (Appendix A, pp. 5-6):

***“2.8 COMPLIANCE WITH OTHER FEDERAL AND STATE REQUIREMENTS***

*The SER does not discuss required compliance with other state and federal regulations prior to the commencement of construction of Cell 4 B. This would include compliance with the requirements of 40 C.F.R. Part 61, Subpart A. Section 61.07 requires that DUSA*

*submit an application to the Utah Division of Air Quality (DAQ) for Cell 4B as a new 40 C.F.R. Part 61, Subpart W regulated source and receive an approval from the DAQ, pursuant to Section 61.08. Recently, DUSA was issued a Notice of Violation by the Environmental Protection Agency for failure to comply with the Subpart A application/approval process for the Arizona 1 uranium mine. Therefore, the DRC should remind DUSA of their Part 61 responsibilities. Additionally, DUSA may be required to amend their air quality permit for the non-radioactive emissions from the uranium mill.*

*The White Mesa license should contain a condition that states that DUSA must comply with all applicable federal and state regulations and statutes and a license condition that states that DUSA cannot commence construction of Cell 4B until DUSA receives the required approval as a new 40 C.F.R. Subpart W regulated source from the DAQ.”*

In oral comments, one person (Bradley Angel) claimed that the State of Utah has an obligation to comply with Federal requirements related to the preservation of ancient, potentially ceremonial and/or culturally significant site since it is making consideration under federal rules. He stated that the State is delegated authority from the federal government to administer this regulatory program (see Appendix B, pp. 9-10).

**Division Response:** Non-substantive Comment.

The regulations cited deal with the EPA NESHAPs program. With respect to air quality issues, the DRC operates within the bounds prescribed by the Utah Radiation Control Act (Utah Code Annotated [UCA] Title 19 Chapter 3) and rules promulgated thereunder. The DRC is not authorized to enforce issues that fall into the domain of the Utah Division of Air Quality (DAQ). Rather DAQ bears this responsibility.

Nonetheless, in a submittal dated April 13, 2010, DUSA made application to DAQ for an amendment to their existing Air Quality Order for the construction of Cell 4B. For convenience of the public, a link has been created on the following DRC webpage to direct a reader to this application: [http://www.radiationcontrol.utah.gov/Uranium\\_Mills/index.htm](http://www.radiationcontrol.utah.gov/Uranium_Mills/index.htm).

With regard to Mr. Angel's oral comments about cultural resources, please refer to the DRC response to Topic PC-01, above.

**Section 2. Oral Only Comments from Public Hearing Held May 4, 2010 in Blanding, Utah**

At the public hearing held in Blanding, Utah on May 4, 2010 several persons made oral comments. These commenters and the topics of their comments are summarized in Table 1. A copy of the transcript from the meeting is found in Appendix B, below. Rather than restating each oral comment verbatim, the DRC has summarized these comments with a concise statement that draws all similar comments together.

***PC-11; Notice of Public Hearing***

Three persons (Bradley Angel, Toni Turk, and Joe Lyman) commented about the process by which DRC provides notification of public hearing.

One person (Bradley Angel) complained that unless affirmatively signing up for the DRCs ListServ web page, a person does not receive notices. He also asserted that many White Basin Ute community members do not have regular access to the internet and asserted that the people most affected by the proposed licensing action are not informed (see Appendix B, p. 8).

Another person (Joe Lyman) stated that he “. . . stumbled into finding out this hearing was happening . . .” and he had sent out an e-mail to a few people, hoping they would attend (see Appendix B, p. 19).

As described above (under PC-09, *Communication/Consultation with White Mesa Ute Tribe*), Toni Turk offered a different opinion, stating that at least one person has worked very closely with the White Mesa Utes and is very computer literate, as well as able to receive and disperse all communications that pertain to that community.

**Division Response:** Non-substantive Comment.

DRC followed applicable administrative requirements contained in Utah Administrative Code Rule 313-17-2 providing public notice of the Public Hearing held in Blanding, Utah on May 4, 2010. The Public Notice was published in the *Deseret Morning News* and the *Salt Lake Tribune* (April 7, 2010 Original Notice; April 9, 2010 Addendum Notice), and the *Blue Mountain Panorama*, a Blanding paper (April 7, 2010 Original Notice; April 14, 2010 Addendum Notice).

***PC-12; Release of Yellowcake from Stacks***

One person (Bradley Angel) asked when was the last time DRC assessed the release of yellowcake (U<sub>3</sub>O<sub>8</sub>) from stacks at the White Mesa mill and when were the people of White Mesa last informed about such releases (see Appendix B, p. 8).

**Division Response:** Substantive Comment.

DUSA conducts periodic monitoring of stack emissions at the White Mesa Facility in accordance with guidance provided in NRC Regulatory Guide 4.14, Rev. 1 (NRC 1980). Emissions from air emission sources (stacks) that involve processes that include effluent control equipment with subsequent emission (i.e., the north yellowcake dryer and yellow cake dryer baghouse) are the subject of quarterly and/or semi-annual monitoring by DUSA. Stack air samples are analyzed for natural uranium, radium 226, thorium 230, and lead 210.

Stack monitoring results are reported in the Semi-Annual Effluent Monitoring Reports. These reports are available to the public upon request under GRAMA. A form for this purpose is provided on the DRC website at: <http://www.radiationcontrol.utah.gov/forms.htm>.

***PC-13; Social Justice***

One person (Bradley Angel) believed that the state is violating the United States Civil Rights Act, Title VI because “[a]s a recipient of federal funding, you are prohibited from taking any actions that would have discriminatory or disproportionate impact on low income people of color, like the White Mesa Ute people...” (see Appendix B, p. 10).

**Division Response:** Non-substantive Comment.

The Executive Secretary disagrees with the commenter’s opinion that DRC’s actions are discriminatory.

***PC-14; Rules Should Be Changed***

*One person (Chris Webb) reported his experience during eight years serving as a member of the Utah State Drinking Water Board (see Appendix B, p. 28-29). He told that people frequently argue that the rules need to change and need to be tougher because undesirable things (what ifs) might occur. This commenter stated, however, that the proposal being considered today should be judged on the rules that are in place today and encouraged the state to judge proposal by today's rules, not on hopes for future changes in the rules.*

**Division Response:** Non-substantive Comment.

Comment noted. No response required.

***PC-15; Economic Benefit and Employment Provided by Mill Operations***

*Two persons mentioned the large economic effect the White Mesa uranium mill has on the surrounding area. One person (Toni Turk) stated that the uranium mill is a major employer of the White Mesa Ute community and works in collaboration with Denison Mines for that employment (see Appendix B, p. 11). Mr. Turk stated that San Juan County is the most impoverished county in the state of Utah and somewhere between the 8th and the 15th most impoverished county in the United States (see Appendix B, p. 13). The person expressed the opinion that not supporting one of the main economic engines of the local economy that supports a large portion of our indigenous peoples and provides their livelihoods would be shortsighted. The person asserted that opposing this proposal would fall short of being concerned for the life, liberty, pursuit of happiness of the population that reside here.*

*Another person (Joe Lyman) stated that employment provided by the White Mesa mill is critical (see Appendix B, p. 20). This person asserted that the mill provides employment to the very people that some say should be protected from the mill. He added that not having that employment could be devastating to the entire area.*

**Division Response:** Non-substantive Comments.

Comments noted. No response required.

***PC-16; DUSA is Responsible and Professional***

*One commenter (Toni Turk) noted that there is a place for regulatory oversight, that is, to ensure that development processes are appropriate and timely and that the necessary adjustments are made as they are judged to be needed (see Appendix B, pp. 12-13). This person also expressed the opinion that Denison Mines is good for the local community and area, that White Mesa management are being good neighbors, and that they are being good contributors to the local economy.*

*One person (Chris Webb, Blanding City Manager) stated that he had have been associated with the mill most of his life (see Appendix B, p. 13). He reported watching the mill propose different actions to promote viability of the milling operations. He also reported that proposals have raised questions in the minds not only of Blanding citizens but of other people in the region and that people get emotionally involved, arguing their love for the area and the surroundings and expressing concern about what any proposal might do. The person expressed his belief that emotion should not be the only factor but that sciences also be considered. Mr. Webb stated his experience in dealing with the mill over many years, that they are a very good steward, partner, and community member (see Appendix B, p. 15).*

*One person (Joe Lyman) reported his impression that by and large White Mesa management has been responsible with what they've done at the mill site (see Appendix B, p. 19). This person reported seeing opposition to activity at the mill that has not been well founded This person expressed his belief that he represented many people who, if they were able to come and speak, would support the mill (see Appendix B, pp. 19-21).*

**Division Response:** Non-substantive Comment.

Comments noted. No responses required.

***PC-17; Balance in Preserving Archaeological Resources***

*One person (Bradley Angel) expressed concern and opposition to the proposed construction because, it was argued, with the blessing of the State of Utah, the company is destroying ceremonial, potential ceremonial, and well-documented culturally significant sites (see Appendix B, pp. 9-10). It was stated that the desecration and absolute destruction of culturally significant ancient sites could involve burials (not just some ancient artifact for a museum). These are part of the living culture of the people here. Agency decisions and actions would help desecrate these sites, continue to devastate the culture of the native peoples of this area, and we believe violate the Civil Rights Act.*

**Division Response:** Substantive Comment.

Please refer to the DRC's response to Topic PC-01 above.

***PC-18; Health and Safety Are Important***

*One person (Chris Webb) commented that, as a community, Blanding had approached the NRC asking for factual information about health and threats to life and safety threats (see Appendix B, pp. 14-15). He stated that health and life safety of our citizens is more important than any economic development, although, economic development is an important part of a community, if it can be done right. He expressed amazement at learning what was being done and all the*

*regulations in place to ensure public safety. The person reported that, as the NRC explained the science and regulations, he became supportive of the [licensing and regulatory] processes and became confident that those processes can continue if the regulations were followed.*

**Division Response:** Non-substantive Comment.

Comment noted. No response required.

***PC-19; Confidence in State and Federal Regulators***

*One person (Bradley Angel) asserted that DRC and other state agencies consistently fail to assess the impacts of actual hazards that are documented, as well as potential future hazards to the health and environment and cultural resources of this area (see Appendix B, p. 8-9).*

*One commenter (Toni Turk) noted that there is a place for regulatory oversight, that is, to ensure that development processes are appropriate and timely and that the necessary adjustments are made as they are judged to be needed (see Appendix B, pp. 12-13).*

**Division Response:** Non-substantive Comment.

DUSA is required to conduct environmental monitoring of air, surface water, groundwater resources and mill and site-related effluent emissions and submit results of such monitoring activities to the DRC on an ongoing, regular basis. These reports are available to the public upon request under GRAMA and are also available at the DRC office in Salt Lake City, Utah. The DRC conducts public hearings, such as the May 4, 2010 Public Hearing in Blanding, to apprise affected communities of planned activities at the White Mesa Mill Facility and to acquire public input and encourage information exchange. Through reviews associated with License and Groundwater Discharge Permit modifications such as this one, the DRC evaluates the potential impacts of site activities on human health and the environment, including cultural resources. Please also refer to DRC's responses in this Public Participation Summary to other public comments received.

***PC-20; Release of Radioactive Materials to the Environment***

*One person (Bradley Angel) asked whether the DRC is aware of any time that radioactive materials associated with this facility ended up not contained, such as by the highway (see Appendix B, p. 26).*

*Another person (Chris Webb) assured that the monitoring is happening and that the state ensures the monitoring takes place (see Appendix B, p. 29).*

**Division Response:** Substantive Comment.

Prior to the DRC becoming an Agreement State in August, 2004, a radiologic survey of the entry road to the mill and adjoining soils (borrow pit areas) was performed by DRC staff.. These informal surveys found some soil activity at levels above background concentration. These findings were communicated to DUSA management, and shortly thereafter, DUSA excavated the soil in question and placed it on the ore storage pad (inside the restricted area) for processing. Annual soil sampling and analysis is performed during the third quarter of each year at several locations both inside and outside the restricted area. The result of this work is provided to DRC in semi-annual effluent monitoring reports by DUSA.

**Section 3. Sundry Changes to Permit and License**

Selected, minor changes have been made to the Radioactive Materials License and the Groundwater Discharge Permit after the Public Comment period ended. These changes are not related to comments received during the Public Comment period, and are not substantive in nature, but instead represent a simple wording change to correct a typographical error or slight changes to reporting or compliance date or deadline to account for changes in the timetables for documents to be submitted by DUSA for DRC review. These changes include the following:

1. License Condition 9.6 – The abbreviation “SOPs” for “standard operating procedures” was added to the first sentence of this License Condition as follows: “Standard operating procedures (SOPs) shall be established and followed for all operational process activities involving radioactive materials that are handled, processed, or stored.”
2. License Condition 9.11 – The deadline for submittal of the revised Reclamation Plan (Rev. 3.2) has been changed from June 1, 2010 to June 30, 2010.
3. License Condition 11.7.E(3) – In order to correct a typographical error, wording has been changed to the following. “Review of the data and **an** analysis shall be performed and certified by a Utah Licensed Professional Engineer **and** submitted ...”
4. License Condition 12.3 – The reporting deadline for the ATER (Annual Technical Evaluation Report) has been changed from September 1<sup>st</sup> of each year to November 15<sup>th</sup> of each year.
5. Permit Part I.E.10(a) – Minor typographical correction (removal of extra comma).

**References Cited**

Denison Mines (USA) Corp (DUSA) 2009. "State of Utah Radioactive Material License No. UT1900479 White Mesa Mill, Blanding, Utah Semi-Annual Effluent Monitoring Report for Period January 1, 2009 through June 30, 2009", company compliance report, August 29, 2009, 169 pp.

Denison Mines (USA) Corp (DUSA) 2010. Letter from Jo Ann Tischler of DUSA to Dane L. Finerfrock, Executive Director, Utah Department of Environmental Quality, Radiation Control Division, "License Condition Number 9.7 – Cell 4B Archeological Clearance", June 8, 2010.

NRC (U.S. Regulatory Commission) 2002. *Design of Erosion Protection for Long-Term Stabilization*. Final Report. NUREG-1623. September 2002. Washington, DC.

NRC 1980. Regulatory Guide 4.14, Rev. 1. *Radiological Effluent and Environmental Monitoring at Uranium Mills*. April 25, 1980.

Telco Environmental 2010. National Emission Standards for Hazardous Air Pollutants 2009 Radon Flux Measurement Program, White Mesa Millsite, prepared for Denison Mines (USA) Corp. by Telco Environmental, Grand Junction, CO. Submitted to DUSA February 17, 2010.

APPENDIX A  
Written Comments Provided to Utah Division of Radiation Control

(See Attached Letter from Ms. Sarah M. Fields dated May 10, 2010)

APPENDIX B

Transcript of Public Hearing Held May 4, 2010 at Blanding, Utah

APPENDIX C  
Revised Radioactive Materials License No. UT 1900479

APPENDIX D

Revised Ground Water Discharge Permit No. UGW 370004