

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:)	
)	
)	Docket No.: 40-9075-MLA
POWERTECH (USA), INC.)	
)	Date: June 20, 2014
(Dewey-Burdock In Situ Uranium Recovery)	
Facility))	
_____)	

POWERTECH (USA), INC. INITIAL STATEMENT OF POSITION

Powertech (USA), Inc. (Powertech) hereby submits its initial statement of position and testimony regarding the grant of License No. SUA-1600 by the United States Nuclear Regulatory Commission (NRC) permitting the construction and operation of the Dewey-Burdock *in situ* leach uranium recovery (ISR) project in the State of South Dakota. The issued license permits Powertech to construct ISR facilities at the Dewey and Burdock sites, including a central processing plant (CPP), ion-exchange (IX) columns, satellite IX facilities, wellfields, and other associated and ancillary structures in accordance with NRC regulations at 10 CFR Part 40 and Appendix A Criteria and other applicable regulations, guidance, and policy.

As will be discussed in greater detail below, a group of individual members of the public (hereinafter “Consolidated Intervenors”) and the Oglala Sioux Tribe (hereinafter the “Tribe”) requested and were granted an NRC administrative hearing pursuant to 10 CFR Part 2, Subpart L of the Commission’s hearing procedures. Over the course of the past four (4) years, the

Licensing Board admitted, amended, and/or migrated two (2) safety and seven (7) environmental contentions.¹

As set forth in Powertech's Initial Statement of Position, Direct Testimony, and Exhibits, Powertech NRC License No. SUA-1600, its record of decision (ROD) and accompanying decision documents, including but not limited to its Safety Evaluation Report (SER),² its Final Supplemental Environmental Impact Statement (NUREG-1910, Supplement 4 or FSEIS), its National Historic Preservation Act (NHPA) Programmatic Agreement (PA) and associated requirements and mitigation measures, and final license conditions (SUA-1600) addressing both safety and environmental-related resource areas, the final decision by NRC Staff to issue SUA-1600 satisfies the Commission's statutory mandate delineated by Congress in the Atomic Energy Act of 1954, as amended by the Uranium Mill Tailings Radiation Control Act of 1978 (collectively the "AEA"), to adequately protect public health and safety and the common defense and security. Accordingly, the safety-related allegations levied by Consolidated Intervenor and/or the Tribe in Contentions 2 and 3 are without merit. Further, as will be shown below, NRC Staff's issuance of SUA-1600 adequately satisfies the requirements of the National Environmental Policy Act of 1969 (NEPA) as interpreted by the Commission in its 10 CFR Part 51 implementing regulations. Thus, the environmental-related allegations levied by Consolidated Intervenor and the Tribe in Contentions 1A/B, 2-4, 6, 9, and 14A/B also are without merit.

I. BACKGROUND AND PROCEDURAL HISTORY

On February 25, 2009, Powertech submitted a license application for a combined source and 11e.(2) byproduct material license to construct and operate its proposed Dewey-Burdock

¹ It should be noted that the two safety contentions are portions of Contentions 2 and 3.

² See NRC Staff Exhibit NRC-134-135; ML14043A347.

ISR project in South Dakota. After completing its ninety day acceptance review, the NRC Staff determined that Powertech's Dewey-Burdock license application required additional data and information prior to docketing it for detailed technical and environmental review. As a result, on June 19, 2009, Powertech voluntarily withdrew its license application pending re-submission of the required additional data and information. On August 10, 2009, Powertech re-submitted its Dewey-Burdock license application with the additional data and information requested by NRC Staff. Powertech's resubmission of its license application provided additional data and information on some specific items such as breccia pipes, the potential for unplugged or improperly plugged site boreholes, and old mine workings and their potential impacts. After completion of a second acceptance review, NRC Staff determined that Powertech's Dewey-Burdock license application was acceptable for detailed technical and environmental review and it was docketed on October 2, 2009.

After the Dewey-Burdock license application was made publicly available, on January 5, 2010, NRC Staff issued a Federal Register notice providing interested stakeholders and other members of the public with an opportunity to request a hearing on the application and to request access to sensitive unclassified non-safeguards information (SUNSI) associated with such application.³ On January 15, 2010, counsel for Petitioners submitted a request for access to SUNSI documentation. After reviewing this request, NRC Staff determined that Petitioners were not entitled to access to the SUNSI documentation. On February 26, 2010, Petitioners submitted a motion for a ninety (90) day extension of time to file their Request based on a number of factors including a lack of time to review the Dewey-Burdock license application. On March 3, 2010, both Powertech and NRC Staff filed responses in opposition to Petitioners' motion and, on

³ See 75 Fed. Reg. 467 (January 5, 2010).

March 5, 2010, the Commission determined that Petitioners were not entitled to an extension of time.

On March 12, 2010, the Commission established an Atomic Safety and Licensing Board Panel (Licensing Board). On March 8 and 9, 2010, and April 6, 2010, CI and the Tribe respectively submitted requests for a hearing including proposed contentions for admission to such a hearing. On April 12 and May 3, 2010, Powertech and NRC Staff respectively submitted responses to CI's and the Tribe's requests respectively and argued that most, if not all, of the proffered contentions were not admissible under NRC regulations at 10 CFR Part 2.309. On June 8 and 9, 2010, the Licensing Board conducted oral argument in Custer County, South Dakota, where all parties' arguments on standing and admissible contentions were heard.

In this proceeding, CI's and the Tribe's hearing requests proffered approximately twenty-one (21) contentions that raised a variety of safety and environmental issues of concern regarding Powertech's license application. On August 5, 2010, the Licensing Board issued LBP-10-16 in which CI and the Tribe each were granted standing to intervene and several contentions for both parties were admitted. More specifically, the Licensing Board admitted several contentions related to historic and cultural resources, adequacy of baseline groundwater quality data, hydrogeological confinement in aquifers within which the proposed Dewey-Burdock Project is to occur, and groundwater consumption. After an October, 2012 teleconference, the Licensing Board consolidated these admitted contentions into the following: (1) CI Contention D (groundwater quality), (2) CI Contention E (hydrogeologic information), (3) CI Contention K (historic and cultural resources), (4) Tribe Contention 1 (historic and cultural resources), (5) Tribe Contention 2 (groundwater quality), (6) Tribe Contention 3 (hydrogeologic information), and Tribe Contention 4 (groundwater quantity impacts).

On January 10, 2010, NRC issued a Federal Register notice indicating its Notice of Intent to prepare a supplemental environmental impact statement (SEIS) for the proposed Dewey-Burdock process. As part of the SEIS preparation process, NRC Staff contacted the United States Bureau of Land Management (BLM) and, per letter dated November, 2011, BLM agreed to serve as a cooperating agency for preparation of what would eventually become the Powertech FSEIS. By joining as a cooperating agency, BLM contributed expertise on a variety of resource areas including historic and cultural resources, land use, soils, and endangered species.

On May 28, 2010, and April 14, 2010 respectively, NRC Staff issued requests for additional information (RAI) on its safety review of Powertech's technical report (TR) and its environmental review of Powertech's environmental report (ER), respectively. On June 28, 2011 and August 12, 2010 respectively, Powertech submitted final responses to NRC Staff's RAIs regarding the ongoing safety and environmental reviews. These documents were made publicly available on NRC's ADAMS database on August 29, 2011 (ML112071064) and September 9, 2010 (ML102380530) respectively. Neither CI nor the Tribe filed a request for admission of a new or amended contention on any of Powertech's RAI responses.

On March 18, 2013, NRC Staff issued its Safety Evaluation Report (SER) detailing the analyses and conclusions of its safety review for all resource areas for the Project, including but not limited to groundwater quality and quantity issues. NRC Staff's final conclusion regarding the safety review was that, absent an environmental concern to the contrary, that its recommendation was that Powertech's requested license should be issued as adequately protective of public health and safety. *See* NRC Exhibit NRC-134-135.

On November 26, 2012, NRC Staff issued the DSEIS for the Dewey-Burdock Project for public comment. By rule, CI and the Tribe were entitled to thirty (30) days to file new or

amended contentions. In compliance with this opportunity and after receiving an extension from December 31, 2012 to January 25, 2013, both CI and the Tribe filed requests to admit several new or amended contentions. On March 11 and 7, 2013 respectively, both Powertech and NRC Staff submitted responses to these requests opposing the admission, amendment or migration of any new/amended contentions. On March 25, 2013, CI and the Tribe submitted replies to such responses.

On July 22, 2013, the Licensing Board issued an Order granting the admission of three (3) new contentions to the proceeding regarding mitigation measures (Contention 6), connected actions (Contention 9), and Endangered Species Act consultation analysis (Contentions 14A/B). The Licensing Board also rejected several contentions, many of which were brought forward from previous contentions on Powertech's license application.

On January 29, 2014, NRC Staff issued the FSEIS which stated that, absent a safety-related concern to the contrary, its recommendation was that Powertech's requested license should be issued. *See* NRC Staff Exhibit NRC-008A & 008-B. The FSEIS included an assessment of the environmental aspects of groundwater and historic and cultural resources at the Dewey-Burdock site, as well as mitigation measures.⁴ Based on the FSEIS, on March 17, 2014, both CI and the Tribe submitted a request to admit new/amended contentions, including migration of existing admitted contentions, to the FSEIS. On April 4, 2014, both Powertech and NRC Staff submitted responses to these requests and, on April 11, 2014, both CI and the Tribe submitted replies to these responses.

On April 28, 2014, the Licensing Board issued an Order allowing the previously admitted contentions to migrate from the DSEIS to the FSEIS with no changes in the substance of such

⁴ *See* NRC Staff Exhibit NRC-008-A & 008-B.

contentions. As a result, the complete list of contentions in this proceeding is detailed in the *Table of Admitted Contentions* in LBP-14-5, Appendix A.

On April 8, 2014, NRC Staff issued notice to the Licensing Board that it had issued Powertech NRC License No. SUA-1600 stating that “the Staff finds that the application complies with the Atomic Energy Act and the NRC’s regulations....The Staff has considered the safety-related arguments raised by the Intervenors in the hearing, but those arguments do not affect the conclusions in the Safety Evaluation Report.”⁵ Included in the ROD issued by NRC Staff was the PA which was the culmination of the NHPA Section 106 Tribal Consultation process for which NRC served as the lead agency.

On April 11, 2014, both NRC Staff and the Tribe submitted Motions for Summary Disposition of certain contentions or portions thereof. NRC Staff’s summary disposition motion sought disposition of the safety-related components of Contentions 2 and 3 dealing with the adequacy of Powertech’s groundwater data and site hydrology, and the Tribe’s summary disposition motion sought disposition of Contention 1A related to historic and cultural resources and Contention 6 on mitigation measures. On April 25, 2014, all parties submitted responses to these summary disposition motions with Powertech supporting NRC Staff’s motion and opposing the Tribe’s, NRC Staff opposing the Tribe’s motion, the Tribe opposing NRC Staff’s motion, and CI supporting the Tribe’s motion and opposing NRC Staff’s. On June 2, 2014, the Licensing Board denied both NRC Staff’s and the Tribe’s motions.

On April 14, 2014, both CI and the Tribe submitted Motions for a Stay of the Effectiveness of Powertech’s NRC license citing various claims associated with Powertech’s and NRC Staff’s review and assessment of historic and cultural resources at the Dewey-Burdock site and other claims. On April 24, 2014, both Powertech and NRC Staff submitted responses to

⁵ See ML14098A492.

these Motions opposing the grant of a stay of SUA-1600. On April 30, 2014, the Licensing Board issued a temporary stay of SUA-1600 pending oral argument, which was held via teleconference on May 13, 2014. On May 20, 2014, the Licensing Board issued an Order lifting the temporary stay and denying a stay of the effectiveness of License No. SUA-1600.

II. APPLICABLE LEGAL STANDARDS

A. SAFETY CONTENTIONS

1. Regulatory Requirements

For safety contentions in this proceeding (i.e., portions of Contentions 2 and 3 specifically related to baseline groundwater quality adequacy and hydrogeological confinement), NRC Staff evaluates the “safety” portion of a license application with a particular focus on the Commission’s 10 CFR Part 40 regulations and accompanying Appendix A Criteria. Safety reviews also extend to additional Commission regulations at 10 CFR Part 20 for radiation protection. However, since no contention admitted to this proceeding implicates potential concerns for radiation safety, these Part 20 regulations are not relevant here.

Powertech’s license application was submitted for a new combined source and 11e.(2) byproduct material operating license allowing the construction and operation of the Dewey-Burdock Project. As the license application is for a new operating license to possess and use both source and 11e.(2) byproduct material in conjunction with ISR or “uranium [source material] milling” operations, NRC regulations require that a license applicant comply with appropriate requirements to allow for a complete safety review of the application. *See generally* 10 CFR § 40 & Appendix A. For the safety review, NRC regulations require that a new ISR operating license application include a full TR addressing a wide range of resource areas, including specifically water resource data, information, and analyses. During the course of its

safety review, NRC Staff’s AEA-based regulatory standard for issuance of an operating license is a demonstration that issuance of said license will result in adequate protection of public health and safety and will not be inimical to the common defense or security. *See* 10 CFR § 40.32. At the completion of its safety review, NRC Staff issues a final SER in which its findings on the aforementioned Part 40.32 standard are documented.

In addition, within the context of 10 CFR Part 40 regulations, new ISR operating license applicants must adhere to the provisions of 10 CFR § 40.32(e) with respect to pre-licensing site construction activities. Independent of its license application, new ISR operating license applicants are permitted to engage in specific site development activities (known as “preconstruction”) prior to the receipt of its requested NRC license. Recently, NRC Staff revised Part 40.32(e) to provide interested stakeholders with clarification regarding the Commission’s position on what site development activities at Part 40 facilities, such as the Dewey-Burdock Project, that are considered to be preconstruction.

2. NRC Guidance

a. NUREG-1569: Standard Review Plan For Safety/Technical Issues

NRC Staff evaluates new ISR operating license applications in accordance with the aforementioned requirements in 10 CFR Part 40 and Appendix A Criteria, as well as NRC Staff guidance contained in NUREG-1569 entitled *Standard Review Plan for In Situ Leach Uranium Extraction Facilities* (hereinafter “NUREG-1569”).⁶ NUREG-1569 was issued for public comment in October of 1997 and later in February of 2002 and was finalized in June of 2003, thereby rendering the document Commission-approved guidance created specifically to address ISR licensing decisions.

⁶ *See* NRC Exhibit 0013; ML031550272.

NUREG-1569 serves as NRC Staff's interpretation of its 10 CFR Part 40 regulations and Appendix A Criteria for the contents of an ISR license application, specifically with respect to safety/technical issues and TRs. In its Table of Contents, the NUREG-1569 delineates the resource areas covered by NRC Staff for TRs, with the caveat that deviations from the guidance therein are permissible assuming that they are properly justified in the license application and are adequate to protect public health and safety and the environment consistent with the AEA's statutory mission.

NUREG-1569 was developed with a specific eye towards the aforementioned Part 40.32(e) construction rule. Chapter 2 of the ISR SRP entitled *Site Characterization* provides license applicants with guidance on submitting data, information, and analyses for site-specific activities that are permissible prior to the issuance of an NRC operating license. More specifically, Chapter 2 of NUREG-1569 addresses the requirements for *license applications* related to site-specific groundwater conditions, including the development of pre-license issuance, baseline groundwater quality as mandated by 10 CFR Part 40, Appendix A, Criterion 7. Criterion 7 of Appendix A is specifically tailored towards pre-license issuance, baseline characteristics at a proposed project site across a wide range of resource areas, including but not limited to pre-license issuance groundwater conditions. Chapter 5 of the ISR SRP entitled *Operations* represents NRC Staff's requirements for ISR operations, including the development of Criterion 5 Commission-approved background, which is the foundation for development of all other operational and restoration standards for groundwater at a proposed ISR site. It is critical to note that Criterion 5 Commission-approved background cannot be developed without the ability to fully delineate an ISR-amenable ore body and to construct a full wellfield and complete monitor well networks. Per the aforementioned Part 40.32(e) construction rule, an ISR license

applicant is not permitted to install a complete wellfield and associated monitor well networks until after a license is issued. Thus, Criterion 5 Commission-approved background cannot be known until after a license is issued. Therefore, the Board should be mindful of this distinction between Criterion 7 (embodied in NUREG-1569, Chapter 2) baseline and Criterion 5 (embodied in NUREG-1569, Chapter 5) Commission-approved background when evaluating groundwater-specific contentions in this proceeding.

B. ENVIRONMENTAL CONTENTIONS

For the remaining contentions in this proceeding (i.e., Contentions 1A/B, portions of Contentions 2 & 3, Contentions 6, 9 and 14A/B), regulatory standards applicable to such Contentions can be found at 10 CFR Part 51. Part 51 was promulgated by the Commission as the implementation of Council on Environmental Quality (CEQ) regulations pursuant to the National Environmental Policy Act of 1969 (NEPA). NEPA is a procedural statute and is not designed to confer any additional substantive jurisdiction beyond that in its empowering statute to a specific agency such as NRC. As an independent regulatory agency, the Commission promulgated Part 51 as its interpretation of CEQ regulations under its AEA statutory mandate of protecting public health and safety and the environment.⁷

1. 10 CFR Part 51 Environmental Review Regulations

To the extent that environmental contentions raised by Intervenors implicate potential deficiencies in NRC Staff's NEPA process, NRC Staff is required to take a "hard look" at the environmental impacts of a proposed action, in this case the Dewey-Burdock Project. This "hard look" is tempered by a "rule of reason" that requires agencies to address only impacts that are

⁷ 49 Fed. Reg. 9381 (March 12, 1984).

reasonably foreseeable –not remote or speculative.⁸ If an admitted contention alleges that an environmental review document (SEIS) is inadequate, “the ‘rule of reason’ by which NEPA is to be interpreted provides that agencies need not consider ‘remote and speculative’ risks or ‘events whose probabilities they believe to be inconsequentially small.’”⁹ Further, “NEPA gives agencies broad discretion to keep their inquiries within appropriate and manageable boundaries.”¹⁰ As stated by the Commission, although “there ‘will always be more data that could be gathered,’” agencies ‘must have some discretion to draw the line and move forward with decisionmaking.’”¹¹

When challenging NRC Staff’s environmental review, an intervening party must identify, with some specificity, the alleged deficiencies in its NEPA analysis.¹² An EIS-level document such as the Dewey-Burdock SEIS may have mistakes or errors but so long as they are not significant or material it does not represent an inadequacy in NRC Staff’s environmental review.¹³ NRC Staff’s environmental review is deemed to be adequate unless NRC Staff “has failed to take a ‘hard look’ at significant environmental questions—i.e., the Staff has unduly ignored or minimized pertinent environmental effects.”¹⁴

For source material milling facilities such as the Dewey-Burdock Project, Part 51 regulations require that a new operating license application’s potential environmental impacts be

⁸ See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-156, 6 AEC 831, 836 (1973).

⁹ *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station, ALAB-919, 30 NRC 29, 44 (1989) (citation omitted).

¹⁰ *Louisiana Energy Servs, L.P.*, CLI-98-3, 47 NRC at 103 (internal citation omitted).

¹¹ *Entergy Nuclear generation Co.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 315 (2010) (footnote omitted).

¹² See *Hydro Resources, Inc.* (Crownpoint Uranium Project), CLI-99-22, 50 NRC 3, 13 (1999).

¹³ See *Exelon Generation Co.* (Early Site Permit (ESP) for Clinton Site), CLI-05-29, 62 NRC 801, 811 (2005) (“[I]n an NRC adjudication, it is Intervenor’s burden to show the ‘significance and materiality’ of mistakes in the EIS).

¹⁴ See *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-03-17, 58 NRC 419, 431 (2003) (discussing what an intervenor must allege, with adequate support, to litigate a NEPA claim).

reviewed using an environmental impact statement (EIS) level document.¹⁵ However, for purposes of new ISR operating license applications, NRC Staff developed a programmatic or generic environmental impact statement (GEIS or “NUREG-1910”) due to the largely standardized aspects of ISR projects across the nation. It is NRC’s intent that all new ISR operating licenses utilize the programmatic analyses and conclusions in the GEIS to the maximum extent practicable in the development of a site-specific SEIS for each proposed license. In the instant case, NRC Staff developed NUREG-1910, Supplement 4 for the Dewey-Burdock Project which analyzed all resource areas for the Project. The only exception to this statement is the completion of the Section 106 Tribal consultation process, which was severed pursuant to 36 CFR § 800.8 from NRC’s Part 51 environmental review.

As a general matter, the Commission is an independent regulatory agency and does not consider itself legally bound by substantive regulations of the CEQ.¹⁶ While the Commission agrees that CEQ’s regulations are entitled to substantial deference where appropriate, these regulations apply only to federal actions to which NEPA applies. In developing Part 51 of its regulations, the Commission stated that it is not bound by those portions of the CEQ’s NEPA regulations that have some substantive impact on the way in which the Commission performs its regulatory functions.¹⁷

The SEIS for the Dewey-Burdock Project was prepared in accordance with applicable NRC regulations and was issued in draft form for public comment on November 15, 2012 for a period of forty-five (45) days. NRC Staff responded to relevant public comments, including those submitted by Powertech, and published such responses in the FSEIS on January 29, 2014.

¹⁵ See 10 CFR § 51.20(b)(8) (2014).

¹⁶ See *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-876, 26 NRC 277, 284 n.5 (1987).

¹⁷ See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-91-02, 33 NRC 61 (1991).

2. NUREG-1748 Environmental Report Guidance

Pursuant to 10 CFR § 51.90 *et seq.*, NRC Staff developed NUREG-1748 entitled *Environmental Review Guidance for Licensing Actions Associated with NMSS Programs*¹⁸ to provide license applicants with its interpretation of Part 51 requirements for ERs for a range of operating licensing actions, including new ISR operating license applications. NUREG-1748 provides license applicants with an acceptable format for these ERs and directs such applicants to provide specific information regarding site-specific conditions at a project site. To the extent necessary and practicable, ISR operating license applicants are encouraged to utilize the analyses and conclusions in the GEIS to further support their site-specific ER. Powertech's license application included an ER modeled on the guidance in NUREG-1748.

3. 36 CFR Part 800 National Historic Preservation Act Regulations

Pursuant to the NHPA, federal agencies are required to assess potential impacts to historic and cultural resources when reviewing new operating license applications. The Advisory Council on Historic Preservation (ACHP) has promulgated regulations to address the agency's role in the conduct of the Section 106 Tribal consultation process and the procedures that should be followed in the development of agreement documents to assist in the protection of historic and cultural sites and resources.

Prior to the initiation of a federal "undertaking" under these regulations, NRC Staff requires that a license applicant provide appropriate, site-specific data and analyses for archaeological and, to the extent practicable, Tribal and other historic properties and resources. For new ISR operating license applications, it is typical practice for an applicant to submit a Level III archaeological study identifying potential historic and cultural properties and resources for review by NRC. After receipt of a license application and identifying the federal

¹⁸ See NRC Staff Exhibit NRC-0014; ML032450279.

“undertaking,” the lead agency (NRC) initiates the Section 106 process which is comprised of four (4) distinct steps. Step one involves the identification of interested/consulting parties with whom the lead agency will consult during the Section 106 process. These consulting parties typically include other federal agencies such as BLM, the State Historic Preservation Officer (SHPO), and interested Tribes and their Tribal Historic Preservation Officer (THPO). Step two involves the identification of historic properties in consultation with the consulting parties with the lead agency required to exercise a reasonable and good faith effort to identify such properties per 36 CFR § 800.4. This step involves the delineation of the area of potential effect (APE), the review of existing information on properties within the APE, and the identification of properties based on information from the consulting parties. As part of this identification effort and as is the case with ISR projects, ACHP regulations permit this identification effort to be phased as ISR projects are, by their nature, phased projects. The phased identification process for ISRs has been endorsed by the Commission in the *Hydro Resources, Inc.* litigation.¹⁹

Step three of the process involves determining whether the identified resources are eligible for inclusion on the National Register of Historic Places and identifying potential adverse effects to such resources from the federal “undertaking.” 36 CFR § 800.5(a)(2) provides a detailed list of potential adverse effects to historic resources including destruction or damage to the resources, alteration to those resources, and visual or audio impacts to a resource’s integrity. The determination of potential adverse effects also is permitted to be conducted in a phased manner. Step four involves the resolution of potential adverse effects in accord with Part 800.6. The lead agency, in consultation with consulting parties, will determine whether adverse effects

¹⁹ See e.g., *In the Matter of Hydro Resources, Inc.* (Crownpoint Uranium Project), LBP-05-26 (September 16, 2005). It is well-understood that where a matter has been considered by the Commission, it may not be reconsidered by a Board. Commission precedent must be followed. See e.g., *Va. Elec. & Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 463-65 (1980).

are present that need to be resolved or, under Part 800.5, render a determination of no adverse effect. In the event that adverse effects are identified, they can be resolved using agreement documents such as memoranda of agreement (MOA) or programmatic agreements (PA). In the instant case, a PA was finalized and signed by mandatory signatories including NRC, BLM, the State of South Dakota SHPO, and the ACHP.

4. Burden of Proof

In a licensing proceeding such as this, an applicant has the burden of proof. However, intervening parties have the initial burden of moving their case (admitted contentions) forward. This burden can only be satisfied by providing sufficient evidence to support their contentions and the allegations levied in such contentions. This burden is applied at hearing, even after a contention is admitted. This burden cannot be satisfied if intervening parties' claims are nothing more than unsupported allegations and mere speculation. Should an intervening party carry their burden, then the applicant and/or NRC Staff has the burden of persuasion to convince a Board to reject the admitted contentions on the merits. The burden to be met by an applicant/licensee and NRC Staff is that their position must be supported by a preponderance of the evidence.

III. POWERTECH EXPERT WITNESSES

While it has submitted Exhibits APP-001-005, 010-014, 037-038, 046-047, and 053-054 as Attachments to this Position Statement, Powertech believes it is important to provide the Board with a brief description of its expert witnesses and their credentials here.

A. DR. LYNNE SEBASTIAN

- Dr. Lynne Sebastian currently serves as a member of the SRI Foundation and the supervising member of the Foundation's continuing professional education and regulatory compliance and technical assistance programs. Dr. Sebastian has more than 30 years of experience in historic preservation issues and is a nationally recognized expert in historic preservation regulatory and legislative issues. She also is a recognized scholar in the archaeology of the American Southwest. Dr. Sebastian has a Ph.D in

Anthropology from the University of New Mexico, a Masters degree in English literature from the University of Utah, and a Bachelors degree in English and Secondary Education from the University of Michigan. Prior to joining the SRI Foundation, Dr. Sebastian was the State Historic Preservation Officer (SHPO) for the State of New Mexico where she administered State and federal historic preservation laws, provided technical assistance to federal, State, and local government agencies, maintained New Mexico's National and State Registers of historic properties, conducted public education and outreach programs, provided technical assistance and preservation incentives for owners of historic prehistoric sites, reviews Section 106 compliance projects and programs, and consulted with federal, State, and local agencies and with Native American Tribes and other traditional communities regarding preservation planning, archaeological research designs, and mitigation plans. Prior to serving as President of the Society for American Archaeology, she was the Chair of SAA's Government Affairs Committee and served a term as Secretary of the Society. Dr. Sebastian also is an Adjunct Professor of Anthropology appointment at the University of New Mexico. Dr. Sebastian also serves as an expert member of the federal Advisory Council on Historic Preservation.

- Dr. Sebastian's testimony is set forth in Exhibit APP-001.

B. DR. ADRIEN HANNUS

- Dr. L. Adrien Hannus currently serves as the Director of the Archaeology Laboratory and a Professor of Anthropology at Augustana College in Sioux Falls, South Dakota and has served in this role since 1982. Dr. Hannus has over forty-five (45) years of archaeological experience with a specialty in prehistoric and historic cultural dynamics. Dr. Hannus received a Ph.D in archaeology from the University of Utah, with an emphasis in archaeology, and a Masters degree in cultural anthropology from Wichita State University. Dr. Hannus has conducted significant cultural and archaeological fieldwork throughout the Great Plains and the Rocky Mountain West, as well as collaborating on projects in Egypt, France, Mexico, and Great Britain. Additional teaching and research interests include early human populations in the New World [specifically Clovis], historic Native American cultures of the Plains, and lithic analysis. Dr. Hannus and his Augustana College team performed the Level III archaeological study submitted by Powertech in support of its license application resulting in issuance of NRC License No. SUA-1600.
- Dr. Hannus' testimony is set forth in Exhibit APP-003.

C. MICHAEL FOSHA

- Michael Fosha currently serves as the Assistant State Archaeologist for the State of South Dakota. Mr. Fosha has a M.A. in Anthropology from the University of Kansas and a B.S. in Anthropology from Kansas State University and has been involved in the discipline of archaeology for approximately 30 years. His work experience includes the migration of complex archaeological sites, National Register evaluation of archaeological sites, survey and geo-archaeological investigation of archaeological sites, analysis of material culture,

research, teaching, outreach, public education of the human past, mining archaeologist and chief review of archaeological investigations pertaining to mining activities and those on State land.

- Mr. Fosha's testimony is set forth in Exhibit APP-010.

D. HAL DEMUTH

- Mr. Demuth is a senior engineer/hydrologist and principal of Petrotek Engineering Corporation. He holds an M.S. in Hydrogeology from the University of Idaho a B.S. in Petroleum Engineering from the University of Tulsa. Mr. Demuth is a member of the Association of Ground-Water Scientists and Engineers (NGWA), the Society of Petroleum Engineers (SPE) and the Society of Mining Engineers (SME). He has served as a manager of groundwater projects for ISR operations (permitting, characterization, design, optimization and regulatory compliance). He currently serves as Team Leader at Petrotek for aquifer testing operations throughout the U.S. Mr. Demuth also has served as project manager for groundwater modeling studies related to TDS and radionuclides/metals plume remediation and restoration operations and regulatory compliance for uranium ISR operations.
- Mr. Demuth's testimony is set forth in Exhibit APP-013.

E. ERROL LAWRENCE

- Mr. Errol Lawrence currently serves as a senior hydrologist employed by Petrotek Engineering Corporation. Mr. Lawrence currently holds a Masters degree in Engineering Geology from the Colorado School of Mines and a Bachelors degree from Northern Arizona University. Mr. Lawrence is a registered professional geologist in the States of Wyoming and Texas and a member of the National Ground Water Association, the American Institute of Professional Geologists, and the National Water Well Association. Mr. Lawrence has worked on more than twelve (12) ISR projects in the United States, Paraguay, Turkey, and Kazakhstan. With specific regard to United States-based ISR projects, Mr. Lawrence has worked on nine (9) Wyoming and two (2) Texas ISR projects. Mr. Lawrence also served as a lead groundwater consultant for the Dewey-Burdock Project.
- Mr. Lawrence's testimony is set forth in Exhibit APP-037.

F. DOYL FRITZ

- Mr. Fritz is a senior technical advisor employed by WWC Engineering. He has a B.S. in Civil Engineering from the University of Wyoming and an M.S. in Civil Engineering from Arizona State University. He is a licensed professional engineer in Wyoming and Colorado and a Life Member of the American Society of Civil Engineers. Mr. Fritz has over 40 years' professional experience in civil engineering, hydrologic investigations, hydraulic design, water rights, water supply and wastewater disposal studies, and surface

mine permitting and regulation. He has broad experience managing a variety of civil and environmental engineering projects. He co-founded WWC and has helped the firm grow into one of Wyoming's largest consulting engineering firms. He is past president of American Council of Engineering Companies of Wyoming, former National Director of American Council of Engineering Companies, and past president of Wyoming Section American Society of Civil Engineers. Mr. Fritz has served as primary author of numerous NEPA compliance documents (Environmental Impact Statements and Environmental Assessments) working as a third-party contractor for various federal agencies, including the Bureau of Land Management and the Interstate Commerce Commission.

- Mr. Fritz's testimony is set forth in Exhibit APP-046

G. GWYN MCKEE

- Gwyn McKee is the President of and Principal Wildlife Biologist for Thunderbird Wildlife Consulting, Inc. She holds a B.S. in Wildlife Management and an M.S. in Wildlife Management/Ecology, both from the University of Missouri, Columbia. She serves as a primary contact for both the energy industry and regulators (local, state, federal) in the Northern Great Plains regarding project requirements and design, impact assessment, and mitigation strategies. Ms. McKee prepares and/or reviews technical reports and documents used by agencies during the permitting process, including contributing to and/or managing environmental impact statements (EISs) and environmental assessments (EAs). Ms. McKee is considered a Qualified Third Party NEPA Contractor by the BLM, USFS, and USFWS, a Qualified Wildlife Biologist by the USFWS, USFS, BLM, WGFD, SDGFP, and MFWP, and qualified by the USFWS to conduct black-footed ferret surveys. She is a member of the The Wildlife Society & Raptor Research Foundation.
- Ms. McKee's testimony is set forth in Exhibit APP-053.

IV. POWERTECH STATEMENT OF POSITION

A. THE ISR PROCESS

Prior to addressing the specific contentions, it is important that the Board understand information on the ISR process so that the context of the aforementioned ISR regulatory programs also may be understood. As a general proposition, the existence of natural geologic, hydrologic, and geochemical conditions in aquifers amenable to the ISR process, the ISR process itself, and regulatory requirements for ISR operations and restoration taken together provide a significant package of mitigation measures to prevent potential short and long-term impacts to

adjacent, non-exempt underground sources of drinking water (USDWs). There are several naturally occurring geologic, hydrologic, and geochemical conditions that, in and of themselves, contribute significantly to the isolation of uranium and its associated heavy metals in a redistributed ore body from other portions of an aquifer that can potentially serve as a USDW and that can serve to complement and enhance the benefits of existing NRC regulatory control requirements for operations and groundwater restoration.

ISR operations were first tried on an experimental basis in the early 1960s with the first commercial facility commencing operations in 1974. ISR processes continuously re-circulate through the ore body native groundwater from the aquifer in which the ore body resides after fortifying it with oxygen and/or carbon dioxide. Uranium deposits amenable to ISR processes occur in permeable sand or sandstones that typically are confined above and below by less permeable strata. Confinement is a natural environmental condition that acts to assist in the creation of isolated deposits of minerals (e.g., uranium) as a natural result of groundwater flow forced by less permeable layers above and below through coarser sands into reducing environments. These deposits can either be tabular or C-shaped deposits formed as “roll-fronts.” These uranium-bearing formations were formed by the lateral movement “down-dip” of groundwater bearing minute amounts of oxidized uranium in solution through the aquifer until precipitation of the uranium occurs along the boundary where the oxygenated waters encounter a zone of abundant reductant. Currently, the uranium roll front deposition that has taken place over millions of years is *ongoing on a regional basis every day*. Regional roll fronts require broad areas of up-gradient oxidation to keep uranium mobile until the oxygenated water moves down-gradient and encounter a zone with sufficient reductant. It is at this regional *redox*

interface where the oxygenated water is reduced and uranium is deposited in a reduced mineral phase in what is known as a rollfront ore body that ISR operations are conducted.

Uranium mineralization leaves a distinct radiochemical footprint or signature in the host rock and surrounding groundwater—that is, uranium occurs not only upon the rock matrices, but also in the groundwater within the ore body. In other words, given natural dissolution processes, uranium and uranium progeny that accumulate on the host sands also occur naturally in surrounding groundwater media. For a uranium ore body to be amenable to ISR processes using industry standard recovery chemistry, the ore zone must be saturated with relatively fresh water and the rock must have enough transmissivity for water to flow from injection to extraction wells. In other words, for the ISR process to work, the ore must be situated in a saturated, water-bearing interval referred to as an aquifer. *There are no ISR uranium recovery operations in ore bodies that are not in aquifers.*

Techniques for ISR operations, including well construction techniques, regular well testing techniques (i.e., mechanical integrity testing (MIT)), upper control limits (UCL) for highly mobile constituents to provide “early warning” of potential excursions, extensive monitor well systems, and well field balance and “bleed,” have evolved to the point where these techniques complement and enhance the above-noted naturally occurring conditions to provide ongoing, iterative mitigation measures with the flexibility to adjust to site-specific conditions in order to protect adjacent USDWs.

After an ore body that is amenable to ISR processes is identified, the licensee develops wellfield designs to progressively remove uranium from the identified ore body. Wellfield design is based on grids with alternating extraction and injection wells, monitor wells above and below the recovery zone, and a ring of monitoring wells surrounding the entire recovery zone to

detect any potential *excursions* of solubilized uranium and other minerals from the uranium recovery production zone. Each wellfield is operated at the maximum continuous flow-rate achievable for that particular wellfield pattern area. Injection and extraction/production flow-rates are monitored and adjusted as necessary on a daily basis, so that injection can be balanced with extraction/production across the entire wellfield, with the injection flow smaller than the extraction flow by the amount of the “bleed” rate. The process “bleed” rate varies according to ore body geometry, well pattern and magnitude, and direction of the natural groundwater velocity. Proper wellfield balance, including the process “bleed,” maximizes recovery while protecting against recovery solution excursions.

The *sequential* development of ISR wellfields is an example of the iterative, “phased” nature of ISR projects. The development of these well-fields and the accumulation of a complete sampling database cannot take place until a project operator installs baseline, production, and monitor wells. Engineers and geologists continually assess data as it is obtained, applying this new information to the next phase or activity, thus ensuring that subsequent exploration and delineation is based on the most up-to-date information possible to ensure proper well placement. Prior to installing monitor wells, additional exploration and delineation has to be conducted to assure the wells are properly placed. As wellfields are developed, all wells, including monitor wells, are pump tested to assure that they function appropriately prior to being sampled. Water quality sampling establishes water quality within and outside the ore zone (i.e., at the monitor wells) and the aforementioned UCLs enable the licensee to readily determine if an excursion has occurred. A “lessons learned” approach is implemented, as the results in one wellfield may cause the site engineer or geologist to change design in the next. This process is both

progressive and iterative, as each wellfield is developed and tested with the mineral being progressively depleted from different parts of the ore body.

During active operations, native groundwater from the recovery zone in the aquifer is pumped to the surface for fortification with oxygen and carbon dioxide. This fortified water, which is similar to soda water (i.e., not water fortified with toxic chemicals), is then returned to the recovery zone through a series of *injection* wells in varying patterns in the well-fields. Water withdrawn from *extraction wells* in these patterns exceeds the water injected into the patterns creating a “cone of depression” that assures a net inflow of water into the recovery zone of the aquifer. This is to ensure no lateral or vertical water movement from the small portion of the aquifer where uranium recovery operations will occur, so that any adjacent, non-exempt USDWs will not be impacted by excursions of recovery solutions. The process also continually flushes fresh water into the recovery zone helping to inhibit the build-up of contaminants that could reduce the efficiency of recovery operations.

The extraction pumping causes the injected lixiviant to move through the uranium ore body oxidizing and solubilizing the uranium present in the host sandstone. The water from the extraction wells is then run through ion-exchange (IX) columns containing synthetic resins, which remove the uranium in a process very similar to that used to remove minerals from “hard” drinking water in a conventional home water softener. The uranium is then stripped from the IX resins using a brine solution (again similar to the backwash that takes place in a home water softener). The uranium in this rich eluate is then precipitated chemically, dewatered, and dried to produce saleable *yellowcake*.

After uranium removal in the IX column, the water in the circuit is re-fortified and re-injected as part of a continuous process until the uranium in the ore zone is exhausted. Since

water from the ore body, already containing naturally occurring uranium and its progeny, is continuously reformed with oxygen and re-circulated through the sandstone to enhance uranium values removed in the IX columns, injection is balanced with extraction (i.e., extraction slightly exceeds injection to maintain an inward hydraulic gradient). Injection cannot proceed without an equal or greater amount of extraction; therefore, over-injection across the area cannot take place. To help keep the continuously operating system in balance, the extra water that is extracted is removed from the circuit as a “bleed.” The “bleed,” which contains elevated levels of radium, can be treated to remove the radium in settlement ponds using a barium-radium sulphate precipitation method. Ultimately, the treated water is discharged to holding ponds or tanks and from there it must be disposed of using deep well injection, solar evaporation, land application or some combination of these methods.

After active ISR operations cease, the groundwater in the recovery zone is restored *consistent with baseline* or other water quality criteria that are approved by NRC prior to the commencement of active production operations. The natural reductive and confining conditions noted above and NRC’s requirement that an ISR operator engage in active groundwater restoration in the recovery zone together serve as the primary bases for mitigation of any potential long-term impacts to adjacent, non-exempt USDWs. Restoration efforts are designed to flush recovery solutions from the recovery zone to enhance its natural pre-operational reductant properties. Logic dictates that these reductant properties which created the redistributed ore body in the first place will be more than adequate to retard movement of mobilized constituents (particularly heavy metals such as uranium) over the long-term.

Upon completion of groundwater restoration, wells are sealed or capped below the soil surface using approved plugging methods and the soil surface is restored. Surface process

facilities are decontaminated, if necessary, and removed, and any necessary reclamation and re-vegetation of surface soils is completed. As a result, after site closure is completed and approved, there is no visual evidence of an ISR site, and the decommissioned site will be available for unrestricted (i.e., any future) use.

Liquid waste also is generated during groundwater restoration when uranium recovery operations have ceased. Groundwater sweep uses existing production wellfield patterns to flush the recovery zone with natural groundwater from outside of the recovery zone and to extract the flushed water from the ore zone for treatment on the surface. Removed groundwater can be treated using reverse osmosis (RO) to create *de-ionized* water which can be re-injected to accelerate groundwater restoration. In fact, more recent groundwater restoration efforts have often used a combination of these two techniques and, possibly, the injection of a reductant and pH modifier to optimize restoration results. Groundwater restoration returns water within the depleted recovery zone to approved levels determined by NRC to be adequate to minimize or eliminate post-restoration migration of contaminants and any potentially significant, adverse impacts to adjacent, non-exempt USDWs.

In over three decades of operations, there have been *no significant, adverse impacts to adjacent, non-exempt USDWs* outside the recovery zone and into the related area of review (AOR)²⁰ from ISR operations in the United States.²¹ Wellfield balancing, use of the “bleed,” and extensive ongoing monitoring and frequent MITs at ISR sites have been highly successful in

²⁰ The “area of review” is essentially a “buffer zone” prescribed by the United States Environmental Protection Agency’s (EPA) underground injection control (UIC) program to provide additional protection for USDWs during ISR uranium recovery. The regulation also states:

“In determining the fixed radius, the following factors shall be taken into consideration: Chemistry of injected and formation fluids; hydrogeology; population and ground-water use and dependence; and historical practices in the area.”

40 CFR § 146.6.

²¹ See United States Nuclear Regulatory Commission, *Staff Assessment of Groundwater Impacts from Previously Licensed In-Situ Uranium Recovery Facilities*, (July 10, 2009).

assuring that leach solution is contained within the ore (recovery) zone and to mitigate the impacts of any excursions. Before monitoring ceases, restoration is completed to minimize or eliminate the potential risk of excursion that could result in the migration of contaminants from the exempted recovery zone portion of the aquifer to adjacent, non-exempt portions of the aquifer.

ISR projects can be operated in one of two facility types. First, an ISR project can be operated using a central processing facility and wellfields that are directly adjacent to the processing facility. This allows the operator to license a defined site footprint and to construct adjacent well-fields from which pregnant lixiviant may be directly pumped to the central processing facility. This recovery approach is best utilized when the identified and defined uranium ore body contains enough uranium to make the licensing, construction, and operation of an individual central processing facility economically viable.

In instances where uranium ore bodies do not contain enough uranium to justify the licensing, construction and operation of central processing facilities, ISR operators may use satellite or so-called “remote IX” technology to develop wellfields that can be at considerable distances from a central processing facility. The use of “remote IX” has been utilized to recover uranium in South Texas as early as 1980 and is currently used by various ISR companies in Wyoming and Texas. Each “remote IX” is a self-contained, stand-alone unit that recovers uranium using IX columns and resins. When the IX resins are fully loaded with uranium, they are pumped into transport conveyances, typically tanker trucks. After the uranium-bearing resins are pumped into the transportation conveyance, the resins are transported to a central processing facility where the resins will undergo the same processes described above. The use of remote IX technology has become increasingly popular given that many uranium deposits (e.g., deposits

with 2-3 million pounds) cannot justify the cost of licensing and constructing a commercial-scale central processing facility.

B. ADMITTED CONTENTIONS

As stated in Section I, above, the Board admitted a total of seven (7) contentions in this proceeding related to a wide range of resource areas and analytical requirements. In the sections below, Powertech will address each contention with the support of its expert testimony, relevant portions of the ROD for NRC License No. SUA-1600, and identified exhibits. As will be shown below, Powertech's position is that none of CI's or the Tribe's admitted contentions should result in modifications to the ROD and NRC License No. SUA-1600 should be upheld in total.

1. Contention 1A: Alleged Failure to Meet Applicable Legal Requirements Regarding Protection of Historical and Cultural Resources

Contention 1A alleges that Powertech and NRC Staff did not satisfy applicable legal requirements under NEPA, the NHPA, and applicable NRC, ACHP, and CEQ regulations because the ROD for NRC License No. SUA-1600 fails to adequately describe the affected environment and the potential impacts to archaeological, historic, and traditional cultural resources. *See* LBP-13-09 at 12. Based on three (3) Board decisions, Contention 1A has successfully migrated from Powertech's license application to NRC Staff's DSEIS and FSEIS. No additional requests from either CI or the Tribe requested that this Contention migrate to NRC Staff's issuance of a final executed PA or any conditions therein regarding historic and cultural resources. Thus, for purposes of Contention 1A and Contention 1B, the PA and its provisions remain unchallenged.

Initially, Contention 1A contains procedural arguments related to NRC Staff's environmental review of the Dewey-Burdock Project and its assessment of historic and cultural resources under NEPA. More specifically, this Contention alleges that NRC Staff impermissibly

severed or “de-coupled” its Section 106 Tribal consultation process from its 10 CFR Part 51 NEPA environmental review (i.e., from the FSEIS development). This allegation is wholly without merit as it is legally flawed.

The NHPA is a separate and distinct federal statute imposing requirements on federal agencies that are outside the scope of NEPA. Pursuant to 36 CFR § 800.8, ACHP regulations for the Section 106 Tribal consultation process allow lead agencies to conduct NHPA-based responsibilities under Section 106 concurrently with and as part of the agency’s NEPA process (e.g., NRC’s 10 CFR Part 51 environmental review). At the beginning of the “undertaking’s” review, the lead agency is permitted to combine these processes, but they are not as a matter of law, mandated to do so. Further, if the lead agency determines during the course of simultaneous conduct of these processes that they should be severed or “de-coupled,” the agency is permitted to do so. *See generally* 36 CFR Part 800.8. Even after NRC Staff engaged in this action, it still completed the Section 106 process in accordance with ACHP regulations culminating in the execution of a PA signed by all mandatory signatories, including the ACHP. NRC Staff’s conduct of the Section 106 process in the instant case is supported by Powertech’s expert testimony from Dr. Lynne Sebastian. *See* Powertech Exhibit APP-001 at ¶¶ A.10 & A.11. Therefore, Contention 1A’s procedural argument on severing the NHPA process from its NEPA process is without merit.

Contention 1A further alleges that the aforementioned PA was not included and analyzed in the FSEIS and resulted in an inadequate assessment of potential impacts to historic and cultural resources and mitigation measures. As stated by Dr. Sebastian in her testimony, ACHP’s 36 CFR Part 800 regulations do not require that a Section 106 document such as a PA be evaluated in a NEPA document. *See id.* at ¶ A.12. The Tribe’s claim that it was not accepted

by the Tribe is also refuted by Dr. Sebastian when she states that only an undertaking proposed to be conducted on Tribal land would require acceptance by that particular Tribe. *See id.* at ¶ A.13. The PA is also referenced by Dr. Sebastian as an ongoing responsibility for Powertech and NRC Staff since a PA can be used where “effects on historic properties cannot be fully determined prior to the approval of an undertaking.” *See* 36 CFR §800.14(b)(1)(ii). This is consistent with the ACHP’s and the Commission’s endorsement of phased identification for projects such as the Dewey-Burdock Project. *See* 36 CFR § 800.4(b)(2). Thus, this procedural allegation levied under Contention 1A is without merit.

Contention 1A also alleges that Powertech, as the then-license applicant and now licensee, failed to enter an MOA with the Tribe and did not seek out the Tribe’s participation in the development of any assessments of or provisions by which potential impacts to historic and/or cultural resources could be assessed and/or mitigated. It further alleges that Powertech failed to adequately include the Tribe in the evaluation of the Dewey-Burdock Project. These allegations are wholly refuted by Dr. Sebastian who notes in her written testimony that a license applicant or licensee such as Powertech “has no responsibility for or authority to enter into consultations with the federally recognized tribes” within the context of the Section 106 process. *See* Powertech Exhibit APP-001 at ¶ 15. This alleged failure to include the Tribe in the review process, which will be discussed in the Contention 1B argument below, is refuted by Dr. Sebastian’s testimony that the current PA addresses all aspects of future consultation regarding mitigation measures and that the Tribes were offered an opportunity to participate in the PA’s development, including Dispute Resolution provisions, and some, including the Tribe, *chose not to do so*. *See id.* at ¶¶ A.15 & A.16. Thus, this allegation must fail as it lacks a proper legal foundation for mandating Powertech to act to gain Tribal participation in the review process and

as the Tribe declined to avail itself of the opportunity to participate in the PA's development. Further, the Tribe cannot challenge the final provisions of the PA in this proceeding as they did not request to migrate or amend this Contention to reflect a challenge to the PA itself.

Contention 1A then continues with allegations regarding the adequacy of Powertech's commissioned Level III cultural resources study conducted by the Archaeology Laboratory of Augustana College (ALAC) and NRC Staff's surveys of traditional cultural properties and site-specific survey to assist in identification of historic properties. With respect to the Level III study, Powertech submits the written testimony of Dr. L. Adrien Hannus, the Director of the ALAC. Dr. Hannus' testimony sets forth the state-of-the-art standards followed by the ALAC team when conducting the study of the Dewey-Burdock Project area, including the fact that it complied with ACHP and State SHPO requirements for such studies. *See* Powertech Exhibit APP-003 at A.6. This testimony also provides significant detail as to the procedures and study preparation steps used by the ALAC team when it conducted this study. *See id.* at A.7. Dr. Hannus' conduct of this study is supported by the written testimony of Mr. Michael Fosha, who currently serves as the Assistant State Archaeologist for the South Dakota State Historical Society. Mr. Fosha attests to the credentials of the ALAC team and refers to them by stating, "I find them to have shown the highest standards in Plains and Northern Plains cultural resource management and research." Powertech Exhibit APP-010 at A.3.

With specific respect to the results of the Level III study, Dr. Hannus attests to the fact that the study was conducted as a one-hundred (100) percent pedestrian survey of the APE using appropriate steps to ensure identification of properties in landscape settings with higher site potential. *See id.* at A.7. According to Dr. Hannus, at all times the study team ranged from four to eleven people with a professional archaeologist as crew chief and that the Tribe's allegations

that “students” conducted the study is a “blatant falsehood.” This response is supplemented by a listing of the team’s credentials through Dr. Hannus’ testimony. *See e.g., id.* at A.10. The conclusions of this report specifically identified several sites whose eligibility had not yet been determined and recommended a phased identification approach to their eligibility evaluations; all of which is supported by ACHP regulations and Commission precedent. *See id.* at A.14. Mr. Fosha’s testimony also supports Dr. Hannus’ study and conclusions. Mr. Fosha references a February 11, 2013 letter to the State of South Dakota Department of Environment and Natural Resources (SDDENR) which, paraphrased, states that his office has no reservation for the issuance of a large-scale mine permit, because the Dewey-Burdock Project lands have been fully inventoried from a cultural resource perspective. *See* Powertech Exhibit APP-010.

Dr. Hannus’ testimony also speaks to a Contention 1A allegation that no subsurface testing was conducted at the Dewey-Burdock site during the ALAC study. Table 1 of Dr. Hannus’ testimony specifically refutes the claims rendered by Dr. Redmond regarding subsurface testing by showing the extensive conduct of subsurface testing during the ALAC study. The level of subsurface testing required at a particular site depends greatly on the site-specific soil strata present during the study. For the Dewey-Burdock Project, Dr. Hannus specifically notes that the soil strata at the site is so severely eroded that “a very limited number of tests reveals that there is virtually no intact soil and, therefore, the site has no integrity and is not eligible.” Powertech Exhibit APP-003 at A.16. Further subsurface testing may be implicated and that process is addressed in the PA as part of the ACHP and Commission-endorsed phased identification. *See id.* at A.17. Thus, Contention 1A’s allegations regarding subsurface testing and the adequacy of the Level III study should be dismissed as they are without merit.

Subsurface testing or a lack thereof is also alleged in Contention 1A with respect to bulldozer operations during site development and potential impacts to unidentified and/or unevaluated cultural resources. Initially, nowhere in the ROD has NRC Staff or Powertech identified that further subsurface testing will not be required and/or conducted. But rather, the PA provides for the development of evaluation plans, including subsurface testing, in the event that it is necessary and for Tribal monitors during site development. This PA provision requires consultation with consulting parties. Further protection of such properties is accomplished pursuant to the PA without the need for divulging confidential information regarding the significance of these cultural sites. *See* Powertech Exhibit APP-001 at ¶ A.31. Additional protective measures may be used such as temporary or long-term fencing. *See id.* at ¶ A.32.

Dr. Hannus also addresses several individual Contention 1A allegations which will be addressed here. Contention 1A alleges that areas near surface waters were not adequately surveyed. Dr. Hannus specifically states that it is standard practice in archaeology that land areas near water sources have a high potential for identifiable sites. *See id.* at A.18. As stated previously, Dr. Hannus attests that the ALAC study was a 100 percent pedestrian survey and that all water sources within the Dewey-Burdock project area were examined. *See id.* The ALAC survey also addressed areas such as terraces and hilltops near water sources using appropriate procedures. *See* Powertech Exhibit APP-003 at A.18. Thus, this allegation must fail as the ALAC study adequately addressed this allegation.

Contention 1A also alleges that the ALAC study did not properly account for past use of the Project area by a variety of Tribes. Dr. Hannus refutes this allegation in his written testimony as he states that ALAC reviewed the evidence available for the Project site and provides that some of the limited identified physical portions of the archaeological record were

evaluated in the study. *See id.* at A.19. Additionally, some physical portions of the archaeological record cannot be linked to any particular Tribe. *See id.* Thus, the ALAC study did indeed address the physical portions of the archaeological record that could be identified and linked or not linked to particular past usage by Tribes. Therefore, this Contention 1A allegation should fail.

Lastly, Contention 1A alleges that the ALAC study did not adequately address all cultural sites, including burial sites. As a general matter, a Level III study is intended to assess the Project area for *all* cultural sites, including burial sites; but, such a study does, in fact, specifically include burial sites. Specific to the ALAC study, it utilized standard archaeological practices to identify specific burial sites and, during the course of the study, ALAC recommended that “cairns and three additional areas of possible EuroAmerican graves be avoided.” *See* Powertech Exhibit APP-009 at 7.16. As shown in Dr. Hannus’ testimony, these practices were followed and sites were accurately identified, including but not limited to one (1) site that was suspected to be a burial site but, in fact was not, and ten (10) sites containing cairns.

With specific respect to traditional cultural properties (TCP) and site-specific Tribal surveys, Dr. Sebastian addresses these matters in her written testimony on Contention 1A. Initially, Contention 1A alleges that a competent survey with scientific expertise and participation from Tribal representatives was not developed and conducted by NRC Staff; but rather NRC Staff invited Tribes to visit the Dewey-Burdock site and proceed with surveys without a scope or methodology. This allegation goes on to claim that accepting site-specific evaluation information from some Tribes that elected to participate was impermissible.

As stated by Dr. Sebastian in her written testimony, these allegations are wholly without merit. First, Dr. Sebastian attests that the idea that “proper scientific expertise” in the context of

identifying TCPs and other traditional properties is “puzzling.” Powertech Exhibit APP-001 at ¶ A.17. Dr. Sebastian states further that identifying religious or culturally significant properties in a project area is entirely reliant on the Tribes themselves and the special expertise of the Tribal cultural practitioners. *See id.* Simply put, entities such as NRC or Powertech are not equipped with the Tribe-specific knowledge and traditions to adequately instruct a specific Tribe using “proper scientific expertise” on this subject. Similar to this, Dr. Sebastian also opines on the “proper methodology” for conducting the identification of religious or cultural significant properties. *See id.* In ¶ A.17 of her testimony, Dr. Sebastian states that there is no “right” way for Tribes to identify such properties. The Tribe, which declined to participate in these surveys,²² has utterly failed to offer any “right” way to do this, nor have they attempted to contradict Dr. Sebastian’s statements. Due to this, NRC Staff’s approach of allowing the interested Tribes the opportunity to visit the Dewey-Burdock Project site and to investigate the Project area for such properties with funding from Powertech satisfied the NHPA’s “reasonable and good faith effort” standard. The determination of whether this standard was satisfied is, as stated by Dr. Sebastian, NRC’s “prerogative.” Powertech Exhibit APP-001 at ¶ A.17. More specifically to this point, Dr. Sebastian states:

“The Programmatic Agreement has been signed by all signatories and the invited signatory. Execution by the ACHP, which is authorized in law to promulgate the regulations for Section 106, also indicates that NRC has met the regulatory requirements for compliance with Section 106.”

See id. at ¶ A.43.

Contention 1A also alleges that the Dewey-Burdock Project site has not been adequately surveyed due to the fact that several identified historic and/or cultural sites have not been fully

²² Dr. Sebastian also notes in ¶ A.22 of her testimony that the Tribe’s failure to participate in the opportunity to visit the Dewey-Burdock Project site and investigate the Project area for religious or culturally significant properties negates Contention 1A’s allegation that the Tribe cannot verify that a comprehensive study on cultural resources has been conducted at the Project site.

evaluated for registration on the NRHP. However, this allegation ignores a large component of the ACHP's 36 CFR Part 800 regulations and the steps for completion of the Section 106 process embodied therein. As stated by Dr. Sebastian, the allegation improperly confuses and combines two (2) separate steps which are the identification step (Step 2 above) and the evaluation step (Step 3 above). *See id.* at ¶ A.21. Contention 1A's failure to identify the differences between these two steps of the Section 106 process demonstrates a clear misunderstanding of the law applicable to this process.

This failure to properly understand the 36 CFR Part 800 regulations for the Section 106 process also migrates to the Contention's inability to note that the identification step has been completed and that the evaluation step may be handled under the ACHP and Commission-endorsed phased identification approach to historic and cultural resources. This is supported by Dr. Sebastian's testimony at ¶¶ A.21 where she notes that the PA establishes the process by which these identified but yet unevaluated properties will be protected prior to evaluation and how they will be evaluated in consultation with the appropriate parties. Indeed, the level of consultation in this phased identification process includes Tribal consultation in evaluation plan development and NRHP eligibility. *See id.* at ¶ A.21.

Contention 1A also alleges that the TCP survey was required to assess both direct and indirect effects on the entire 10,580 acre area. Tribes were invited to participate in the identification effort, including investigation of all areas within the APE. As stated by Dr. Sebastian, Table 1 of the PA, which has not been and cannot be challenged in this proceeding, shows that NRC Staff did indeed evaluate direct and indirect effects for all identified historic properties. *See* Powertech Exhibit APP-001 at ¶ A.20. As a result, based on the preceding argument, it is Powertech's position that the entirety of Contention 1A should be dismissed.

Contention 1A further alleges that the Tribe was excluded from the Section 106 process until after the DSEIS was issued and that this exclusion prevented the Tribe from being able to participate in initial identification efforts and harms the Tribe in its ability to participate in later adverse impact determinations. The Board should look to Appendix B, Section 4 of the PA, which the Tribe has not and cannot now challenge, for a detailed timeline of NRC Staff's Section 106 process actions. NRC Staff commenced the process of contacting consulting parties on March 19, 2010, when initial contact with twenty Tribes was made. Four (4) additional Tribes were added to this list in April of 2010. The Tribe accepted NRC Staff offer to consult on the Dewey-Burdock Project on January 31, 2011. As discussed in Dr. Sebastian's testimony, several additional consulting actions, including a June 8, 2011 information gathering meeting, an initial site visit the next day, and a February 14-15, 2012 session to hear Tribal input on how to appropriately identify religious and culturally significant properties. *See id.* at ¶ A.24. All of these activities occurred prior to the issuance of the DSEIS in November of 2012. Consultation continued up to the issuance of the FSEIS and NRC License No SUA-1600 with the issuance of the PA. Tribal consultation also will continue under the PA's provisions. Thus, the Tribe has not been affected adversely in any way by NRC Staff's conduct of the Section 106 process, and this allegation should be dismissed.

Another Contention 1A allegation focuses on the number and density of cultural resources at the Dewey-Burdock project site and the potential likelihood of adverse impacts to such resources from the licensed operation. Again, this allegation demonstrates a fundamental lack of understanding of the Section 106 process and the current ROD. As part of the Section 106 process, the lead agency (NRC) is required to conduct an assessment of potential adverse effect (step 3 above) and determine whether such effects will actually occur from the

“undertaking.” As noted in the record and by Dr. Sebastian in ¶ A.27 of her testimony, NRC Staff already determined that the Dewey-Burdock Project will have adverse effects on cultural resources and, as part of its mitigation efforts, it has developed and executed a PA (with ACHP as a signatory) addressing mitigation of these effects. The PA’s provisions on these matters are not and cannot be challenged by CI or the Tribe in this proceeding for the reasons noted above. Further, as stated by Dr. Sebastian in ¶ A.42 of her testimony, execution of the PA by ACHP demonstrates that it has determined that NRC has satisfactorily completed its Section 106 requirements and ACHP’s 36 CFR Part 800 regulations.

2. Contention 1B: Alleged Failure to Involve or Consult All Interested Tribes as Required by Federal Law

Contention 1B submits several allegations that scrutinize NRC Staff’s conduct of the Section 106 process, including consultation efforts with Tribes. First, Contention 1B alleges that NRC Staff failed to execute its legally mandated “reasonable and good faith effort” to consult with appropriate Tribes, including specific Tribes identified such as the Omaha, Skidi, and Southern Cheyenne Tribes. These allegations are offered in concert with additional allegations that NRC Staff did not satisfy the legal mandate of the NHPA imposed through ACHP regulations at 36 CFR Part 800 *et seq.* Contention 1B has migrated throughout this proceeding pursuant to three (3) Board Orders from Powertech’s license application to NRC Staff’s DSEIS and FSEIS. This Contention, however, has not migrated to or been amended to reflect a direct challenge to the PA and its provisions.

As a general matter, it is the lead agency’s responsibility to identify and consult with potentially affected Tribes; but however, as stated by Dr. Sebastian in ¶ A.33 of her testimony, “it is not a clear-cut process to identify which tribes might be interested in a particular undertaking.” Powertech Exhibit APP-001 at ¶ A.33. As part of a typical process, NRC Staff

sought assistance from the South Dakota SHPO and, as stated above, was provided with approximately twenty (20) Tribes to contact as potential consulting parties. This list of Tribes was supplemented using additional resources and suggestions from the already-contacted Tribes. Further, in February of 2013, NRC Staff identified additional Tribes and, as noted by Dr. Sebastian, “NRC contacted and began consultations with the Omaha tribe, the Pawnee Nation of Oklahoma (of which the Skidi are one of the four confederated bands), and the Cheyenne and Arapaho Tribes of Oklahoma (Southern Cheyenne).” *See id.* at ¶ A.36. On this matter and the other procedural allegations in Contention 1B, Tribes will continue to have consultation roles in the future for site development pursuant to the PA, the provisions of which are not and cannot now be challenged. NRC Staff determined that it engaged in a “reasonable and good faith effort” with the provision of funds from Powertech to investigate potential religious or culturally significant properties and the development and execution of the PA to complete the Section 106 process. Since there are only two statutory requirements under Section 106, taking into account the effects on historic properties and affording the ACHP the ability to comment on NRC (and BLM) efforts to account for the effects of the undertaking, the execution of the PA by all mandatory and the one invited signatories represents satisfactory completion of the Section 106 process. Thus, the entirety of Contention 1B should be dismissed.

3. Contention 2: Alleged Failure to Include All Necessary Information for Adequate Determination of Baseline Groundwater Quality

Contention 2 involves a series of allegations regarding baseline groundwater quality data and information presented by Powertech in its license application and used by NRC Staff to issue NRC License No. SUA-1600. This Contention also alleges that Powertech did not comply with certain provisions of NUREG-1569 regarding gathering and submission of baseline groundwater quality data and that NRC Staff’s conclusions in the FSEIS that Powertech’s proposed ISR

operation and commitments in its license are adequate to comply with NRC regulations for baseline groundwater quality are incorrect. Contention 2 is both a safety and an environmental contention in this proceeding. As the argument and testimony offered below will show, Contention 2 should not result in any modification to Powertech's NRC License No. SUA-1600.

Initially, Contention 2's allegations should be put in the proper context so that an evaluation of compliance with applicable NRC regulations for "baseline" groundwater quality can be properly understood. For ISR operations, the gathering and analysis of groundwater quality at a project site is contingent on specific NRC regulatory requirements. 10 CFR Part 40, Appendix A, Criterion 7 requires that a license applicant conduct a minimum of twelve months of pre-operational monitoring to provide "complete baseline" data for a number of resource areas including site groundwater quality. However, as noted in NUREG-1569, Chapter 2, a license applicant is not required to gather *complete* site groundwater quality data in order to support an ISR operating license application. As stated on Page 2-2 of NUREG-1569, NRC's guidance states:

"Reviewers should keep in mind that the development and initial licensing of an in situ leach facility is not based on comprehensive information. This is because in situ leach facilities obtain enough information *to generally locate the ore body and understand the natural systems involved*. More detailed information is developed as each area is brought into production....[R]eviewers should ensure that sufficient information is presented to reach only the conclusion necessary for initial licensing."

See also Powertech Exhibit APP-037 at ¶ A.26.

As stated previously, this is NRC Staff's interpretation of Commission regulations and is supported by the Part 40.32(e) construction rule which prohibits the installation of an entire wellfield, including monitor well networks.

In addition, this regulatory system is further supported by 10 CFR Part 40, Appendix A, Criterion 5(B)(5) which establishes groundwater quality standards for operating uranium

recovery facilities. Unlike the required “baseline” groundwater quality data under Criterion 7 for *license applications*, Criterion 5(B)(5)’s operations groundwater quality standard is termed “Commission-approved background” and is the primary groundwater protection standard for operational uranium recovery facilities. In the context of ISR facilities and in accordance with Chapter 5 of NUREG-1569, the final determination of “Commission-approved background” requires the installation of a complete wellfield, including monitor well networks above, below, and around the wellfield, and an analysis of all groundwater quality data within that wellfield to determine a number of groundwater protection limits such as UCLs. This is the control system for ISR operations to operate efficiently at these sites to monitor for, detect, and remediate potential excursions and be prepared to perform restoration after exhaustion of the ore body. This control system allows pump testing to determine confinement and serves as an early warning system for excursions from wellfields to assure that adjacent, non-exempt USDWs will be protected. As will be shown below, the control system based on well-accepted industry experience that is embodied in license conditions and standard operating procedures assures effective groundwater data gathering, monitoring, and protection.

Powertech’s groundwater expert, Mr. Hal Demuth, specifically addresses NRC’s regulatory scheme for groundwater at ISR facilities. His testimony focuses directly on the fact that the gathering of baseline and, later, the determination of Commission-approved background is a phased process over the course of pre and post-license, pre-operational reviews and procedures. *See* Powertech Exhibit APP-013 at ¶ A.13-23. His testimony also uses this Commission-approved regulatory scheme to justify NRC Staff’s approval of Powertech’s pre-license baseline groundwater data and analyses pursuant to Criterion 7 and its *procedures* for gathering and analyzing sufficient groundwater data to establish Criterion 5 Commission-

approved background. *See id.* at A.13. He describes in detail how NRC Staff complied with the Commission's requirements under these Criteria and reviewed all aspects of these data and analyses in both the SER and FSEIS. *See id.* at A.19 & A.21. Further, he specifically notes that Powertech is precluded from attempting to gather all required data for a determination of Criterion 5 Commission-approved background by the provisions of the Part 40.32(e) construction rule. *See id.* at A.22. Mr. Demuth also confirms that the phased approach to acquire Criterion 7 baseline and Criterion 5 Commission-approved background is commonly used at NRC-licensed ISR facilities. *See Powertech Exhibit APP-013 at ¶ A.23.* It is Powertech's position that this argument and testimony accurately embodies NRC's regulatory approach to groundwater at ISR facilities and the adequacy of the ROD's supporting issuance of NRC License No. SUA-1600.

Specific to Contention 2, the initial allegation is that Powertech's license application and NRC Staff's FSEIS do not contain and adequately analyze baseline groundwater quality data. Contention 2 is rife with allegations that Powertech did not comply with identified acceptance criteria in NUREG-1569 and that NRC Staff's safety and environmental reviews culminating in the development and finalization of the SER and FSEIS do not adequately assess baseline groundwater quality.

In response to these allegations, Powertech relies upon the testimony of Mr. Demuth and Errol Lawrence. As will be shown in their testimony, Powertech's license application and NRC Staff's decision documents adequately evaluate and approve baseline groundwater quality data and license commitments. Initially, Mr. Demuth's testimony properly summarizes NRC regulations for baseline groundwater quality *data* and Commission-approved background groundwater data *procedures* as embodied in the ROD. Contention 2 alleges that Powertech's

license application and the FSEIS do not comply with NUREG-1569, Section 2.7.1(4).

Compliance with sections of NUREG-1569 is the responsibility of the license applicant and not NRC Staff and, thus, any challenges to the SER or FSEIS based on NUREG-1569 provisions is without merit. Further, both Powertech's license application, including RAI responses, and NRC Staff's decision documents repeatedly address the groundwater quality necessary for a license application. Mr. Lawrence's testimony provides multiple references to these documents and their adequacy. *See* Powertech Exhibit APP-037 at ¶ A.8-A.15.

Contention 2 also alleges that Powertech's license application and NRC Staff's decision documents violate NUREG-1569, Section 2.7.3(4) regarding "reasonably comprehensive" baseline groundwater quality data. Mr. Lawrence discusses the term "reasonably comprehensive" in his testimony and notes that NRC guidance identifies approximately 34 constituents that should be included in the groundwater monitoring/sampling data. *See id.* at ¶ A.18. In each portion of his testimony regarding this specific allegation, Mr. Lawrence identifies locations in the record, including Powertech's license application and NRC Staff's decision documents, where this requirement is satisfied. *See id.* at A.20. His testimony also identifies a commonly used American Society for Testing and Materials (ASTM) standard used by Powertech for sampling procedures that has been used by other NRC-licensed ISR operators. *See id.* at A.24. Based on this, Contention 2's allegation on this portion of NUREG-1569 should be dismissed.

Mr. Lawrence also provides supporting testimony for Powertech's and NRC Staff's conclusion that the groundwater data gathered, submitted, and approved in the record complies with Criterion 7's requirement for "baseline" groundwater quality, including guidance-derived parameters for their analyses. Powertech's "baseline" groundwater quality data utilized NRC

Staff regulatory guides and other guidance (including NUREG-1569) to determine the proper radius for groundwater sampling, as approved in the SER, as well as the fact that certain guidance, while developed for conventional mills, can properly be used for ISR facilities where relevant. *See* Powertech Exhibit APP-037 at ¶¶ A.26-A.32. Further support for these conclusions also was derived from a comparison to past TVA data over a 30 year period, which Mr. Lawrence attests to in his testimony. *See id.* at A.33. He also states that evaluation of the submitted data was done without such data being biased as alleged by opposition declarations and that groundwater in the proposed ore zone needs to be exempted by EPA in order to conduct recovery operations. *See id.* at A.34-A.36. Additionally, the duration of groundwater quality sampling was for a period of approximately eighteen (18) months rather than just the mandatory 12 months in Criterion 7. In short, the totality of Mr. Demuth’s and Mr. Lawrence’s testimony demonstrate that the conclusions reached by NRC Staff in its decision documents and its review of Powertech’s license application are based on adequate “baseline” water quality data to satisfy Criterion 7 requirements that was submitted and approved.

4. Contention 3: Alleged Failure to Include Adequate Hydrogeological Information to Demonstrate Ability to Contain Fluid Migration and Assess Potential Impacts to Groundwater

Contention 3 consists of a series of allegations regarding the adequacy of hydrogeological data and analyses submitted, reviewed, and approved demonstrating Powertech’s ability to contain recovery solution migration during operations and restoration at the Dewey-Burdock Project site. In response to this Contention, Powertech will rely on the testimony of Mr. Lawrence and Mr. Demuth. Powertech emphasizes here that the entirety of its written expert testimony addresses each allegation levied in this Contention, but its written position statement

addresses the primary allegations related to potential hydrogeologic data and confinement of recovery solutions at the Project site.

As a general proposition and as stated in the Contention 2 argument, the gathering of site-specific hydrogeologic data and information is a phased process. As stated by Mr. Demuth, the initial acquisition of such information is to satisfy the requirements of Criterion 7 for baseline groundwater quality data. Powertech can only gather information permitted under the Part 40.32(e) construction rule, which is consistent with Chapter 2 requirements in NUREG-1569 and then post-license issuance, pursuant to Chapter 5 of NUREG-1569, Powertech will gather additional detailed information on hydrogeologic conditions, including that from pump tests to identify and justify the location of a wellfield's monitor well network and hydrogeologic confinement. *See* Powertech Exhibit APP-013 at ¶¶ A.27-A.30. None of these Chapter 5-related activities are permitted without a license. Mr. Lawrence's testimony further supports this when addressing compliance with specific NUREG-1569, Chapter 2 criteria, including those related to baseline data demonstrating excursion control and characterizing hydraulic properties such as porosity, conductivity, and gradient. *See* Powertech Exhibit APP-037 at ¶¶ A.38-A.43. Compliance with NUREG-1569 criteria also implicates Powertech's 2012 Numerical Groundwater Model, which offered sufficient information for NRC Staff to complete its DSEIS/FSEIS analyses of subsurface hydraulic conditions prior to the issuance of a license. *See id.* at A.41. NRC Staff reviewed this groundwater model and, to the extent necessary, used that model to finalize its conclusions on site-specific hydraulic properties in the FSEIS. *See id.* at ¶ A.42.

With respect to Contention 3's allegations on adequate confinement at the Dewey-Burdock Project site, Powertech's position is that the Fall River and Chilson aquifers are isolated

sufficiently for the safe conduct of ISR operations. Sections of the FSEIS and Powertech's license application are cited by Mr. Demuth in his testimony such as the information supporting their isolation due to the presence of the Fuson Shale and the cross sections that show the locations of three (3) major confining units across the Project site. *See id.* at A.31. The multitude of data and analyses present in the ROD also demonstrate that the Project is aimed at recovery operations in fluvial sandstones similar to those at ISR facilities that have operated safely for decades. *See* Powertech Exhibit APP-037 at ¶ A.44-A.46. The suitable confinement for operations similarly can be projected to the formation proposed for use of Powertech's proposed Class V wells (i.e., the Minnesula and Deadwood formations) and the Madison formation which is the proposed source of supplemental water for the Project. Mr. Lawrence's testimony also notes that sufficient controls will be put in place to prevent a lack of confinement due to unplugged or improperly plugged exploration holes and have been used at other licensed ISR facilities due to the fact that "most historic drill holes were plugged and abandoned using techniques sufficient to prevent vertical migration of wellfield solutions, natural processes seal open drill holes, and adequate procedures are in place to locate unplugged or improperly plugged holes during wellfield delineation and testing to prevent potential impacts." *See id.* at ¶ A.56

Subsurface features alleged in Contention 3 to be a potential cause of migration of recovery solutions during operations or restoration is discounted by the testimony of Mr. Lawrence and the FSEIS and SER. Using USGS subsurface mapping, there is no evidence of faults or fractures in the Project area and, on the contrary, the record evidence supports the likelihood that no such structures exist with the potential to substantially impact groundwater flow. *See id.* at ¶ A.47. The FSEIS' and SER's conclusions support this premise and also utilize substantial record evidence in their formulation. *See id.* at ¶¶ A.49-A.50. Additionally, the

evidence in Powertech's license application, including RAI responses, and in NRC Staff's decision documents support the premise that there are no breccia pipes in the Project area that could cause issues with hydraulic confinement and fluid control. *See* Powertech Exhibit APP-037 at ¶¶ A.52-A.55. Moreover, as is the case with groundwater quality data, Powertech is required to acquire and analyze more information post-license issuance pursuant to license condition and other record requirements. *See id.* at ¶ A.51. Based on these arguments and the written testimony presented herein, it is Powertech's position that Contention 3 should be dismissed and should not result in any modification to the ROD.

5. Contention 4: Alleged Failure to Adequately Analyze Groundwater Quantity Impacts

Contention 4 consists of a series of allegations regarding Powertech's and NRC Staff's alleged failure to adequately analyze potential groundwater quantity impacts for the Dewey-Burdock Project. This Contention's allegation specifically attempts to invalidate a variety of aspects of the Dewey-Burdock operational approach including items such as water balance, pumping rates, and potential impacts to local wells from the licensed operation. Contention 4 is an environmental contention that has migrated from Powertech's license application to NRC Staff's DSEIS/FSEIS. While this Contention is focused on NRC Staff's analysis of groundwater quantity impacts, Powertech deems it appropriate to provide supporting argument and testimony regarding the licensee's analysis of these potential impacts and the validation of NRC Staff's analysis. In this response, Powertech will be relying on the written testimony of Mr. Demuth, Mr. Lawrence, and Mr. Fritz. Powertech emphasizes here that the entirety of their written expert testimony addresses each allegation levied in this Contention, but its written position statement addresses the primary allegations related to potential groundwater quantity impacts.

Contention 4 levies allegations related to potential impacts to local wells in the Dewey-Burdock project area due to volume of water used during operations and restoration. The estimated sustainable pumping rate and quantity for the Inyan Kara at the Project was finalized in the FSEIS based on the submission of Powertech's 2012 Numerical Groundwater Model (Powertech Exhibit APP-025). This specifically contradicts Contention 4's allegation that the pumping rates for the Project are inconsistent with the record. *See* Powertech Exhibit APP-037 at ¶ A.106. The record further indicates that both the DSEIS and the FSEIS adequately address potential impacts to local wells from the Project's water use. Mr. Demuth's written testimony specifically identifies sections of the DSEIS and FSEIS that address this issue and how Powertech's groundwater model provided adequate information to substantiate these conclusions. *See* Powertech Exhibit APP-013 at ¶¶ A.46-A.47. Powertech also provided adequate water balance in its license application, which was reviewed, approved, and documented in the FSEIS. *See* NRC Staff Exhibit NRC-008A-008B.

Contention 4 contains an allegation that the lifecycle of the Dewey-Burdock Project will result in the consumption of billions of gallons of water is misguided. As stated in the testimony of Mr. Doyl Fritz, SDDENR approved water rights applications from Powertech based on assumptions related to not exceeding the average annual recharge of the Inyan Kara and Madison aquifers. *See* Powertech Exhibit APP-046 at ¶ A.12. Mr. Fritz also compares the Project groundwater consumption rate in the Inyan Kara to a member of CI (Dayton Hyde) who requested a water right for irrigation purposes using a center pivot system. *See id.* at ¶ A.12. Mr. Fritz concludes that this water right request projected over the Project lifecycle and in accord with this allegation puts Mr. Hyde's consumption at 90.6 million gallons per year or more than what has been requested by Powertech. *See id.* Mr. Fritz's testimony also offers an analysis of

Powertech's proposed groundwater consumption for the Madison aquifer and concludes that the statement that the Project's groundwater consumption would be "massive" is incorrect. *See id.* at

¶ A.13

Contention 4 also alleges that there is no information on baseline water levels and pumping rates for domestic and stock wells surrounding the Project site. Mr. Demuth's testimony specifically addresses the fact that existing pre-license issuance data on these wells is present in Powertech license application, including its RAI responses and was used in the groundwater model. *See* Powertech Exhibit APP-013 at ¶ A.48. His testimony also reiterates the responsibility of a licensee to gather post-license issuance groundwater quality data on these wells pursuant to license condition, and the requirement that Powertech protect such wells within the Project area such as removing all domestic wells within the license area from private use prior to operations and all stock wells within ¼ mile of wellfield from private use prior to operating those wellfields and during operation of the Project. *See id.* at ¶ A.49. These preventative measures also contribute to mitigation measures discussed in Section 6 on Contention 6. Based on the argument and testimony on this Contention, Powertech's position is that Contention 4 should be dismissed and should not result in a modification to the ROD.

6. Contention 6: Alleged Failure to Describe or Analyze Proposed Mitigation Measures

Contention 6 is an environmental contention offered in this proceeding as a challenge to the mitigation measures offered by Powertech and NRC Staff in the ROD. More specifically, Contention 6 is an attempt to challenge various aspects of the record with incomplete information or a complete misunderstanding of the analyses offered in NRC Staff's decision documents.

Generally speaking, an evaluation of mitigation measures is a standard component of new ISR operating license applications and is submitted as part of the application's ER pursuant to NUREG-1748. Typically, a mitigation measure analysis in a license application is nothing more than a preliminary offering of data and other information to assess potential, reasonably foreseeable actions within a given review area (e.g., 50 mile/80 kilometer radius from the project area). Over the course of a license application review, NRC Staff will submit RAIs to the license applicant requesting any additional specific data and information regarding a variety of resource areas, including but not limited to mitigation measures for the Proposed Action. In the instant case, Powertech's license application describes a variety of mitigation measures, including the development of mitigation measures prior to operations but post-license issuance. These items were contained in both the TR and ER, as well as relevant RAI responses and are discussed in ¶ A.23 of Mr. Doyl Fritz's written testimony. *See* Powertech Exhibit APP-046.

However, the license application and RAI responses are merely a small portion of the ROD for all resource areas including mitigation measures. As discussed in his response to Contention 6's allegation that NRC Staff's FSEIS' assessment of mitigation measures merely consists of a multi-page chart, Mr. Fritz states that "[t]he allegation seems to reflect either a lack of understanding or an incomplete reading of what is contained in the FSEIS." Powertech Exhibit APP-046 at ¶ A.6. This multi-page chart is a summary table and does not, in any way, purport to describe the complete scope of planned mitigation measures, their development and implementation or their effectiveness. *See id.* These proposed mitigation measures are described in additional areas such as FSEIS Sections 2 and 4.

Contention 6's allegation regarding mitigation measures consisting of nothing more than plans to be developed later after license issuance (post-NEPA process) also ignores the

Commission's endorsement of performance-based licensing, including the development of wellfield packages, post-license issuance. *See Hydro Resources, Inc. (Crownpoint Uranium Project)*, CLI-99-22 (July 23, 1999). Further, specifically with respect to wellfield packages and mitigation measures for managing drilling fluid during well drilling operations as stated above, 10 CFR Part 40.32(e) ("construction rule") prohibits full wellfield development prior to the issuance of a license. Thus, Contention 6 cannot claim that these mitigation measures should have been implemented during the NEPA process, pre-license issuance.

With respect to specific resource areas covered under Contention 6 regarding mitigation measures, Powertech will attempt to address these items here. Contention 6 alleges that mitigation measures with respect to groundwater are inadequate and that NRC Staff's FSEIS fails to adequately address such measures. Generally speaking, groundwater restoration imposed by NRC through Powertech's license serves as the ultimate mitigation measure. By law, companies such as Powertech are not permitted to engage in ISR operators in an aquifer or a portion thereof without an aquifer exemption from EPA or a primacy State (which South Dakota is not for ISR-specific wells) under the SDWA. This aquifer exemption, by definition, labels an ISR amenable aquifer or portion thereof not suitable for drinking purposes now or at any point in the future. *See* 40 CFR § 146.4. Thus, restoration of an exempted aquifer post-ISR operations typically does not make any legal or practical sense for water quality purposes in that aquifer. Due to this, groundwater restoration in such aquifers or portions thereof can only be as a mitigation measure to re-establish the natural geochemical conditions in the ore zone aquifer in order to prevent or minimize migration of recovery solutions post-restoration to adjacent, non-exempt aquifers.

Contention 6-specific allegations on mitigation measures for groundwater at the Dewey-Burdock Project are addressed by Powertech's groundwater expert Mr. Demuth in his written testimony. Contention 6's broad allegation that NRC Staff's FSEIS does not adequately address mitigation measures for groundwater ignores two fundamental facts. First, the allegation merely focuses on the FSEIS' mitigation measures and not the discussions and analyses in NRC's SER. As stated by Mr. Demuth, the mitigation measures discussed in the FSEIS are the same as those evaluated by NRC Staff during the course of its safety review and memorialized in the SER. *See* Powertech Exhibit APP-013 at ¶ A.51. Indeed, the FSEIS provides frequent references to the SER and the license conditions imposed as a result of the safety review. The SER's finding that Powertech's proposed ISR operations (including restoration) will adequately protect public health and safety on its face assures significant mitigation of any potential environmental. *See id.* at A.52. Thus, the entirety of the ROD, and not just the FSEIS must be taken into consideration by the Board when ruling on Contention 6's groundwater allegations.

Second, Contention 6's groundwater allegation does not account for the wide range of groundwater-related mitigation measures identified in FSEIS, Section 6. As is the case with other resource areas, Section 6 of the FSEIS provides a summary chart of groundwater-related mitigation measures with supporting analyses of such measures and their acceptability are found throughout the FSEIS, particularly in Sections 2 and 4. Mr. Demuth's testimony also specifically references mitigation measures for controlling pipeline leaks and identifies various references to discussions in both the FSEIS and the SER demonstrating that NRC Staff properly analyzed this particular mitigation measure. *See id.* at A.52.

Next, Mr. Demuth also discusses mitigation measures associated with minimizing potential impacts from historical mine pits. Contention 6 alleges that the FSEIS does not have

sufficient detail to address mitigation on this issue and only requires future plans for monitor well networks in the eastern portion of the Project area where the Chilson aquifer is the production zone. Initially, Mr. Demuth points to NRC Staff's response to comments in the FSEIS which specifically state the variety of mitigation measures approved for recovery operations near historic mine pits, including the need to demonstrate through typically, post-license issuance, pre-operational ore body delineation drilling, wellfield installation, and the development of a monitor well network where the Chilson is the production zone. *See id.* at A.55. Mr. Demuth specifically notes that in the allegation regarding potential impacts from historic mine pits, "there is no mention of the first four...mitigation measures....Instead the intervenors claim that since the Fall River aquifer monitoring well network is 'unsubmitted' and 'unreviewed' that the FSEIS conclusion of small impacts is 'unsubstantiated.'"²³ *See id.* This allegation once again fundamentally ignores the Part 40.32(e) construction rule prohibition on full wellfield, including monitor well network, installation prior to license issuance and the Commission-endorsed policy on performance-based licensing for ISR as approved in the *Hydro Resources* litigation.

The remainder of Mr. Demuth's testimony on groundwater-related mitigation measures can adequately be summarized as Contention 6 ignores typical, NRC-approved post-license issuance techniques for wellfield development and uranium recovery. For example, Contention 6 alleges that the FSEIS does not adequately address potential impacts from exploration or abandoned boreholes. But, this allegation ignores how the ISR process works and how the wellfield's development contributes as a mitigation measure. When developing an ISR wellfield, a licensee must first delineate the full extent of the ore body it seeks to recover so that it will

²³ Mr. Demuth's testimony also provided a detailed discussion of the specific mitigation measures related to this allegation. *See id.* at ¶ Section 5.

fully understand subsurface conditions to a greater extent than is permitted by NRC regulations under Part 40.32(e) and Chapter 2 of NUREG-1569. After this is complete, pump tests are necessary to determine the nature of the subsurface systems and the responses received by the licensee to recovery technique. As part of this process, a licensee is then able to identify whether abandoned boreholes are present and if they would contribute negatively to the recovery process. This process then allows the licensee to properly plug and abandon such boreholes to ensure no impacts are experienced during operations or restoration. As stated by Mr. Demuth, the FSEIS specifically addresses how the development of wellfield hydrologic packages, including pump tests, will include the utilization of approved South Dakota regulations and procedures to properly plug and abandon these boreholes. *See* Powertech Exhibit APP-013 at ¶ A.59. Mr. Demuth cites to both the FSEIS and the SER as sources of NRC Staff's review and evaluation of wellfield development, identification of abandoned or exploration boreholes, and their plugging and abandonment. *See id.* Specifics of pumping tests and their effectiveness are discussed by Mr. Demuth in his written testimony as well. *See id.* at ¶ A.60.

Mr. Demuth also discusses the plans for Powertech to restore groundwater and conduct stabilization monitoring in accordance with the ROD. The FSEIS addresses several allegations levied under Contention 6 with respect to groundwater restoration beginning with the appropriate standard for restoration cited at FSEIS page 2-40. Contention 6 alleges that Powertech committed to restoring site groundwater to pre-mining conditions, which is incorrect. FSEIS page 2-40 references a commitment by Powertech to restore site groundwater to 10 CFR Part 40, Appendix A, Criterion 5(B)(5) standards, which is Commission-approved background or an MCL, whichever is higher, or an ACL. Thus, this allegation in Contention 6 represents a complete misrepresentation of the ROD.

Contention 6 also alleges that the procedures for groundwater restoration are not identified in the ROD, including NRC Staff's decision documents. According to Mr. Demuth, Powertech's license application, including RAI responses, and the FSEIS and SER identify, analyze, and approve groundwater restoration procedures for the Dewey-Burdock Project. These approvals also are supported by analyses of at least three (3) different past or current ISR projects and historical evidence provided by the International Atomic Energy Agency (IAEA). *See* Powertech Exhibit APP-013 at ¶ A.64. Mr. Demuth also states that it is incorrect to state that restoration methods approved for the Dewey-Burdock Project consist only of "proposals" to restore. *See id.* at ¶ A.65.

Mr. Demuth's testimony also addresses Contention 6's allegations regarding stabilization monitoring post-restoration. Contention 6 alleges that there is no support for a plan to conduct stabilization monitoring for twelve months. NRC Staff's analysis on stabilization monitoring is centered on a license condition requiring a *minimum* of four quarters of monitoring and also requires that specific restoration standards for water quality parameters must be met for the "most recent four quarters" of sampling. The FSEIS, page E-54 specifically states NRC Staff must review and approve groundwater restoration data and make the final determination that restoration is complete. *See id.* at ¶ A.66. As stated by Mr. Demuth, Powertech's proposed monitoring procedures have been reviewed and approved by NRC Staff in the SER and are consistent with past approved practices at other ISR facilities. *See id.* at ¶ A.68. These factors demonstrate that the portions of Contention 6 related to groundwater mitigation should be dismissed.

Contention 6 allegations regarding mitigation measures for air quality and emissions are addressed by Mr. Fritz by noting in his testimony that they are summarized in FSEIS Tables 6.2-

1 and 6.3-1 and are fully described throughout the FSEIS' impact analysis in Section 4.

Allegations regarding on-site disposal of radioactive waste are unfounded because ISR sites do not dispose of 11e.(2) byproduct material on-site. Commission policy implementing the requirements of 10 CFR Part 40, Appendix A, Criterion 2 specifically does not allow on-site disposal of such material; but rather imposes a license condition on ISR operators requiring that such material be disposed of at an NRC or Agreement State licensed 11e.(2) disposal facility. This license condition is further enforced by NRC with a requirement that the ISR operator have an off-site disposal contract with such a facility in place prior to the commencement of licensed operations. This is common sense because an ISR operator does not generate 11e.(2) byproduct material until licensed source material (uranium) milling commences. *Compare* 10 CFR Part 40.4 definition of "uranium milling."

With respect to land application, NRC Staff's FSEIS provides for a wide range of mitigation measures, including water treatment methodology, sampling, and reporting.²⁴ These mitigation measures all are designed to be implemented during operations and restoration, while further procedures for soil sampling and, if necessary, remediation is required for decommissioning and surface reclamation. These measures are all discussed in the FSEIS, Section 6 and referenced in Mr. Fritz's testimony.²⁵ *See* Powertech Exhibit APP-046 at ¶ A.25.

Further mitigation measures are present for protecting wildlife in contravention of the Contention 6's allegation of inadequate protection of wildlife. NRC's FSEIS proposes more than adequate mitigation measures for protecting wildlife, which are summarized in FSEIS Section 6, including limiting noise and vehicular traffic and wildlife access to wastewater ponds, adherence

²⁴ Powertech also has received a recommendation for approval of a groundwater discharge plan from SDDENR, which further augments mitigation measures for water quality.

²⁵ Mr. Fritz's testimony also reflects the fact that several mitigation measures approved for use by Powertech in NRC Staff's FSEIS already have been reviewed and approved by SDDENR. *See* Powertech Exhibit APP-046 at ¶¶ A.25 & A.28.

to timing and distance restrictions from appropriate agencies to protect active raptor nests during breeding seasons, and following appropriate land application requirements. Further protective measures are referenced by Powertech's expert Ms. Gwyn McKee in her written testimony. *See* Powertech Exhibit APP-053 at ¶ A.8. Ms. McKee also determines that the effectiveness of these mitigation measures is evidenced by being in line with current recommendations by regional experts such as those in South Dakota's Greater Sage-Grouse management plan (Powertech Exhibit APP-055), the Sage-Grouse National Technical Team (Powertech Exhibit APP-056), and the FWS' Greater Sage-Grouse Conservation Objectives (Powertech Exhibit APP-057), even though there are no sage grouse in the Project area. *See id.* at ¶ A.9. Other mitigation measures that match established expert recommendations are discussed in Ms. McKee's written testimony. *See id.*

Ms. McKee's testimony also addresses mitigation measures associated with the Avian Monitoring and Mitigation plan. As a general matter, an avian plan is a requirement imposed on Powertech prior to construction by South Dakota and not by NRC. NRC's FSEIS merely accounts for the implementation of such a plan and references that it is an acceptable mitigation measure in FSEIS Section 6. Ms. McKee specifically references materials provided in Powertech's license application and the FSEIS regarding compliance with NUREG-1569, Acceptance Criteria 2.8.3(4). This Criteria merely requires that a license applicant provides materials regarding steps to be taken to mitigate impacts to an identified species and its environment, *but does not require the submission and completion of an actual avian plan.* *See id.* at ¶ A.10. The proposals and their parameters for the avian plan are based on well-understood monitoring and mitigation measures used at Wyoming surface coal mines which, as stated by Ms. McKee, incur much more substantial impacts to avian species than the Dewey-Burdock

Project. Therefore, since these materials were provided in Powertech's license application and assessed in the FSEIS and they are based on well-understood and accepted parameters, Contention 6's allegation on the avian plan must fail.²⁶

In summary, "NEPA does not require 'a fully developed plan that will mitigate environmental harm before an agency can act,' rather, NEPA requires only that 'mitigation be discussed in sufficient detail to ensure that environmental consequences have been evaluated,'" which the NRC ROD more than satisfied.²⁷

7. Contention 9: Alleged Failure to Consider Connected Actions

Contention 9 is an environmental contention alleging that the ROD fail to consider connected actions in association with NRC Staff's review of the Dewey-Burdock Project license application and the development of NRC's decision documents (i.e., FSEIS, license conditions, SER, and PA). More specifically, this Contention alleges that NRC Staff failed to appropriately engage other federal agencies in their review process and document preparation. Contention 9 is an environmental contention that has migrated through this proceeding from Powertech's license application to NRC Staff's decision documents, including the DSEIS and FSEIS. However, since no amended contentions or requests to migrate were submitted and approved for the final license and the PA, this contention does not apply to these parts of the record. Further, while this Contention appears to be levied specifically at NRC Staff conduct of its review, Powertech deems it appropriate to offer expert testimony and argument in support of NRC's review.

Initially, Contention 9 alleges that NRC did not fully engage other federal agencies in the review process. As stated in the testimony of Mr. Fritz, the FSEIS and other components of the

²⁶ It is important to note that Ms. McKee's testimony also references and describes the process by which the avian plan is being developed, its timing, and the mitigation measures it seeks to impose. *See id.* at A.11-A.12.

²⁷ *Holy Cross Wilderness Fund v. Madigan*, 960 F.2d. 1515, 1522 (10th Cir. 1992), *quoting Methow Valley*, 490 U.S. at 352-53.

ROD are rife with references to NRC's engagement with other federal agencies. First, the BLM was brought in by NRC Staff as a cooperating agency on the development of the FSEIS, which is expressly permitted (but is not mandatory), under CEQ regulations. To be a cooperating agency on the FSEIS, NRC Staff and BLM engaged in joint development of the FSEIS, and BLM will be utilizing the FSEIS to develop its supplement for Powertech's requested Plan of Operations (POO). Further, as stated by Mr. Fritz, NRC Staff's FSEIS cites to numerous examples of how BLM participated in the license application review, including several sections where NRC Staff specifically consulted with BLM on a variety of issues. *See* Powertech Exhibit APP-046 at A.26. Thus, Contention 9 is not supported by any lack of BLM involvement.

With respect to EPA, the agency that is responsible for issuance of Powertech's requested aquifer exemption(s) and UIC permits for Class III and V wells, Mr. Fritz's testimony specifically identifies the locations in the FSEIS where EPA's involvement in the license application review process is identified and/or described. In addition to the FSEIS descriptions of EPA's involvement, Contention 9 also ignores that EPA was integrally involved in the FSEIS' development, including receiving multiple preliminary drafts of the DSEIS and commenting in writing on both the DSEIS during the public comment period and the FSEIS during its thirty day post-issuance concurrence period. *See id.* at A.26.

EPA regulatory authority for SDWA aquifer exemptions and UIC permits in South Dakota also are specifically identified in the FSEIS. As a regulatory matter, 40 CFR Part 124.9(b)(6) prohibits the preparation of an EIS in conjunction with a UIC permit. But, throughout the FSEIS, NRC Staff provided comprehensive evaluations of the potential impacts of Class III wells associated with their construction and use and Class V wells for wastewater disposal also were discussed along with other wastewater disposal options. As noted by Mr.

Fritz, there are numerous references to these analyses throughout the FSEIS' Chapter 4 impact analysis. *See id.* at A.27. This impact analysis also addresses the false presumption levied in Contention 9 that radioactive wastewater from the Dewey-Burdock Project will be disposed of either in a Class I well, which is not permitted in South Dakota, or in a Class V well. As stated by Mr. Demuth, both allegations are false because Powertech applied for a Class V permit from EPA, which has the regulatory authority to issue such permits and "radioactive waste" is not injected into Class V wells. *See* Powertech Exhibit APP-013 at ¶¶ A.69-A.71 The latter reason is supported by NRC requirements in Powertech's license that wastewater must be treated to meet 10 CFR Part 20, Appendix B, Table 2, Column 2 limits and EPA regulations cited at FSEIS page 2-22, which states that liquid waste injected into a Class V well cannot qualify as hazardous material.²⁸ *See* 40 CFR Part 144.3.

Lastly, Mr. Fritz's testimony addresses the Contention 9 allegation that NRC Staff did not conduct an independent analysis of potential environmental impacts associated with the Dewey-Burdock Project. Specifically, Contention 9 alleges that NRC Staff relied solely on other agencies such as SDDENR and EPA for environmental analyses. Initially, this allegation represents a complete misunderstanding of how NRC Staff "signs-off" on the use of other agency procedures or approvals. When NRC Staff agrees with the use of other agency procedures that are not necessarily within the Commission's federal, preemptive AEA jurisdiction, it evaluates the characteristics and protective nature of these procedures to determine if they are adequate to satisfy NRC's AEA mission of adequately protecting public health and safety. A good example of this is well plugging and abandoning which is typically conducted by NRC-licensed ISR operators in accordance with relevant State Engineers Office

²⁸ Mr. Demuth also notes that there is no regulatory requirement that Class V wells must be above or below a USDW in response to a Contention 9 allegation to the contrary. *See* Powertech Exhibit APP-013 at ¶ A.71

procedures. Further, as noted by Mr. Fritz, while certain agencies may have regulatory jurisdiction over the issuance of specific permits or authorizations, such as EPA over UIC permits or South Dakota over NPDES permits, NRC Staff still conducted its own evaluation of the potential impacts associated with such permits and authorizations in the FSEIS. For example, while South Dakota will assess the potential impacts associated with and issue a NPDES permit, NRC Staff still assessed its potential impacts and mitigation measures for protecting surface waters. *See* Powertech Exhibit APP-046 at A.28. Thus, based on the argument and testimony noted above and the written testimony submitted by its experts, Powertech's position is the Contention 9 should be dismissed and should not result in a modification to the ROD.

8. Contention 14A: Alleged Failure to Conduct Appropriate Consultation Under the Endangered Species Act and Implementing Regulations

Contention 14 consists of a series of allegations regarding NRC Staff's consultation with the United States Fish and Wildlife Service (FWS) regarding potential environmental impacts to identified species in the Dewey-Burdock Project area. Powertech's responses to this Contention and the expert testimony of Ms. McKee are limited to addressing the FSEIS' provisions noting that the Section 7 ESA consultation was conducted properly for threatened and endangered (T&E) species, correcting misinterpretations and misstatements in the scope of this Contention, summarizing FSEIS data and analyses and updating recent Project data. Contention 14A is an environmental contention that has migrated from Powertech's license application to NRC Staff's decision documents. As is the case with Contention 9, while Contention 14A appears on its face to be an attack on NRC Staff's conduct of its environmental review, Powertech deems it appropriate to offer supporting argument and testimony here.

Contention 14A alleges that the ESA Section 7 consultation was not adequately completed and has resulted in a significant threat to T&E species. This allegation is not supported by the record in that NRC Staff's FSEIS specifically notes that it considered federal T&E species and determined they have not been documented in the Dewey-Burdock Project area and that they were not expected to occur in the area. Based on these factors, it determined that the Project will not affect such species. *See* Powertech Exhibit APP-053 at A.15. Then, the FSEIS documents that the FWS consulted with NRC Staff and determined that further consultation was not needed. *See id.* at A.16. The FWS' written confirmation that further consultation was not necessary are based on both NRC Staff's determination and FWS records of no federal T&E species in the Project area. Ms. McKee summarizes her conclusions in ¶ A.17 confirming that the process was conducted correctly. Thus, this Contention 14A allegation is without merit.

Contention 14A also alleges that NRC Staff was required to "conference" with FWS pursuant to 50 CFR § 402.10(a). Ms. McKee points out in her testimony that the Tribe's citation of this regulation is incorrect and does not support their allegation. *See id.* at ¶ A.18. The citation to this regulation by the Tribe is not consistent with the actual intent of its language. As stated by Ms. McKee, the "confer" requirement in this regulation is not to be confused with "consult" and the former deals with conferences between FWS and other agencies regarding species not yet listed as T&E or habitats not yet designated as critical. *See id.* For additional understanding on this incorrect reference, Ms. McKee refers the Board to FWS' ESA Section 7 Handbook (Powertech Exhibit APP-058) and FWS' website (Powertech Exhibit APP-059). This fundamental mischaracterization of the regulation's meaning renders this Contention 14A allegation inapplicable to this proceeding and, thus, should be dismissed.

Lastly, Contention 14A alleges that the DSEIS does not document any attempt to consult on black-footed ferrets and whooping cranes with FWS to obtain concurrence. However, this allegation does not, and cannot, challenge the findings on this issue in the FSEIS as the Contention did not migrate to the FSEIS. As stated by Ms. McKee, NRC Staff addressed this issue in its response to comments at E-156, which states that FSEIS Section 1.7.1 describes FWS/NRC correspondence confirming that the whooping crane and black-footed ferret, while federal T&E species that could occur in Custer and Fall River counties, neither has ever been documented at the Project site. *See id.* at ¶ A.20.

9. Contention 14B: Alleged Adequacy of Impact Analysis to the Greater Sage Grouse, the Whooping Crane, and the Black-Footed Ferret

Contention 14B consists of a series of allegations regarding the adequacy of NRC Staff's actions within the scope of its license application review and development of the ROD with respect to three species: (1) the Greater Sage-Grouse; (2) the whooping crane; and (3) the black-footed ferret. Powertech's responses to these allegations will rely on specific argument and the expert testimony of Ms. McKee. Again, while this Contention appears on its face to be an attack on NRC Staff's conduct of its environmental review, Powertech deems it appropriate to offer supporting argument and expert testimony here.

First, with respect to the Greater Sage-Grouse, Contention 14B alleges that there is no documentation regarding NRC Staff's assessment of this species in the Dewey-Burdock Project area in the DSEIS. As stated in Contention 14A above, NRC Staff consulted with FWS on the Greater Sage-Grouse and documented its analysis in the DSEIS, which later appeared in the FSEIS. Despite the FWS sage-grouse conservation objectives not being finalized when the DSEIS was issued for public comment, the document did indeed address those objectives and noted that they could be implemented for the Project when finalized. *See* Powertech Exhibit

APP-053 at ¶ A.22. The DSEIS, and then the FSEIS, also analyze the potential impacts to the sage-grouse in general and documented such findings. As stated in the Contention 6 argument above, these documents also addressed mitigation measures associated with protecting the sage-grouse. Thus, this portion of Contention 14B must fail.

Second, with respect to the whooping crane, Ms. McKee's testimony directly challenges the Tribe's allegation and references multiple areas of the ROD where NRC Staff documented the assessment of this species and its consultation with FWS. Ms. McKee specifically states that the Contention's allegation on the whooping crane fails to appropriately identify the area of review for FWS consultation, noting that the proper area of review is the Project area and not Custer or Fall River counties as a whole. *See id.* at ¶ A.23. Based on previous information noted above, this species is not documented as appearing in the Project area and this fact is documented in NRC Staff in the DSEIS and FSEIS. *See id.*

Lastly, with respect to the black-footed ferret, Contention 14B alleges that there is no FWS concurrence present in the record; no evidence is present that the prairie dog colony at the Dewey-Burdock Project site is likely too small to support and sustain a breeding population of black-footed ferrets; and no evidence that NRC's "no jeopardy" determination is based on necessary expertise and investigation. Section A.24 directly address these allegations and she further attests to the fact that FWS' confirmation that the black-footed ferret will not be affected by the Project was an indirect confirmation that the prairie dog population would be too small to sustain a breeding population. *See id.* at A.24. The FSEIS at page 3-61 also provides additional information that a comparison of Powertech's preliminary monitoring information on prairie dog colonies in the Project area to the FWS' current recovery plan for the black-footed ferret demonstrates that NRC's conclusion is correct. *See id.* In addition, Ms. McKee confirms that

Powertech also has committed to several monitoring measures during the Project's lifecycle to assure that prairie dog populations are tracked adequately.

V. **CONCLUSION**

Based on the argument and expert testimony discussed above and in concurrence with the arguments and expert testimony offered by NRC Staff, Powertech's position is that each of the Contentions offered by both CI and the Tribe should be dismissed and should not result in a modification to the ROD representing and supporting Powertech's NRC License No. SUA-1600.

Respectfully Submitted,

**/Executed (electronically) by and in
accord with 10 C.F.R. § 2.304(d)/
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Dated: June 20, 2014

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:)	
)	
)	Docket No.: 40-9075-MLA
POWERTECH (USA), INC.)	
)	Date: June 20, 2014
)	
(Dewey-Burdock In Situ Uranium Recovery)	
Facility))	
_____)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **“POWERTECH (USA), INC.’S STATEMENT OF POSITION”** in the above captioned proceeding have been served via the Electronic Information Exchange (EIE) this 20th day of June 2014, which to the best of my knowledge resulted in transmittal of the foregoing to those on the EIE Service List for the above captioned proceeding.

Respectfully Submitted,

**/Executed (electronically) by and in
accord with 10 C.F.R. § 2.304(d)/
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Dated: June 20, 2014