

June 20, 2014

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
POWERTECH (USA) INC.,)	Docket No. 40-9075-MLA
)	ASLBP No. 10-898-02-MLA-BD01
(Dewey-Burdock In Situ Uranium Recovery)	
Facility))	

NRC STAFF'S INITIAL STATEMENT OF POSITION

I. Introduction

The NRC Staff submits its Initial Statement of Position on Contentions 1, 2, 3, 4, 6, 9, and 14. In these contentions the Consolidated Intervenors and the Oglala Sioux Tribe (collectively, the Intervenors) challenge the Final Supplemental Environmental Impact Statement (FSEIS) the Staff prepared for Powertech (USA) Inc.'s proposed Dewey-Burdock Project. The Board should dismiss the contentions and affirm that the Staff's review of the Dewey-Burdock application complied with applicable law.

II. Background

A. Powertech's Proposed Action

In 2009, Powertech applied for an NRC license to be used in connection with the proposed Dewey-Burdock in-situ uranium recovery (ISR) facility in Fall River and Custer Counties, South Dakota.¹ Powertech's proposed uranium recovery method involves injecting lixiviant into an underground ore zone containing uranium deposits. The lixiviant will consist of groundwater charged with oxygen and carbon dioxide. As lixiviant is pumped through the ore zone, the uranium dissolves into the lixiviant. The uranium-bearing lixiviant is then pumped

¹ On April 8, 2014, the NRC Staff issued Powertech Source Material License No. SUA-1600 (Ex. NRC-012).

back to the surface, where the uranium is separated from the lixiviant, processed into yellowcake, and shipped to other facilities to be enriched for use as reactor fuel. After the uranium is removed, the lixiviant is recharged with oxygen and carbon dioxide and re-injected into the ore zone to repeat the cycle.

In order to conduct its ISR operations, Powertech plans to build a number of wellfields at both the Dewey and Burdock sites. ISR wellfields consist of geometric-shaped patterns of injection and production wells, along with monitor wells that surround the ore zone. The injection wells form the corners of the geometric-shaped patterns, while the production wells are at the center. Figures 2.1-7 and 2.1-8 in the Staff's Final Supplemental Environmental Impact Statement (FSEIS) for the Dewey-Burdock Project show typical well placement and wellfield patterns at ISR facilities.²

As is typical of ISR operations, Powertech will inject 0.5 to 3 percent less groundwater through its injection wells than it extracts through its production wells. This 0.5–3% difference, referred to as “bleed,” creates a cone of depression in the pressure surface of the aquifer. This forces groundwater to flow continually to the center of the production zone. This procedure is used in order to maintain a flow of groundwater into the wellfield and prevent lixiviant from flowing toward the monitor wells surrounding the ore zone. This procedure is also designed to prevent “excursions,” *i.e.*, the migration of lixiviant toward the surrounding aquifer.

The ore zone from which Powertech proposes to extract uranium is within the Inyan Kara Aquifer. The Inyan Kara is the shallowest of four major water resource aquifers in southwestern South Dakota. It is separated by confining layers from the underlying aquifer, the Minnelusa. Below the Minnelusa is the Madison and, below that, the Deadwood Aquifer. The directional flow in these aquifers is generally southwestward and away from the central part of

² Ex. NRC-008-A, NUREG-1910, Supplement 4, “Environmental Impact Statement for the Dewey-Burdock Project in Custer and Fall River Counties, South Dakota: Supplement to the Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities” (Vol. 1) (ADAMS Accession No. ML14024A477) (FSEIS) at 2-13 and 2-14.

the Black Hills region. Figures 3.5-4 and 3.5-5 in the FSEIS, along with Section 3.5.3.2, provide overviews of the hydrogeology and stratigraphy underlying the Dewey-Burdock Project.³

B. Powertech's Application

As part of its application, Powertech submitted a Technical Report to show that it meets NRC safety requirements for granting a license.⁴ In Powertech's case, the applicable safety requirements are in 10 C.F.R. Part 20 and Part 40. These safety requirements include certain criteria in Appendix A to Part 40, which provides specific standards for operating uranium mills and disposing of waste material. Because an ISR facility like the Dewey-Burdock Project is not a conventional uranium mill, however, Powertech need not satisfy all the criteria in Appendix A in order to receive an NRC license.⁵

After Powertech submitted its Technical Report, it supplemented the report with responses to the Staff's requests for additional information (RAIs).⁶ This supplemental information included a four-volume submittal in June 2011. This information also included a Groundwater Model for the Dewey-Burdock Project that Powertech submitted in February 2012. These documents were available for viewing through the NRC's Agencywide Documents Access Management System (ADAMS) soon after Powertech submitted them.⁷

Along with its license application, Powertech also submitted an Environmental Report addressing its proposed facility's impact on the environment.⁸ The Environmental Report, which

³ Ex. NRC-008-A at 3-31, 3-32, and 3-34 through 3-36.

⁴ Exs. APP-015-A through APP-015-V.

⁵ See *Hydro Resources, Inc.* (2929 Coors Road Suite 101 Albuquerque, New Mexico 87120), CLI-99-22, 50 NRC 3, 9 (1999) ("We agree that those requirements in Part 40, such as many of the provisions in Appendix A, that, by their own terms, apply only to conventional uranium milling activities, cannot sensibly govern ISL mining.")

⁶ Exs. APP-016-A through APP-016-BB.

⁷ In its monthly hearing file updates, the Staff notified the Board and the parties when Powertech's supplemental application materials became available in ADAMS.

⁸ Exs. APP-040-A through APP-040-EE.

is required by NRC regulations in 10 C.F.R. Part 51, helps inform the Staff's independent review of a license application and thereby helps the Staff meet the requirements of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §§ 4321 *et seq.* Since Powertech submitted its Environmental Report, it has provided additional information relevant to the Staff's NEPA review, including responses to the Staff's RAIs.⁹

C. The Staff's Safety Review

As with other applications for a new ISR license, the Staff conducted a safety review of Powertech's application. The Staff conducted its review to determine whether Powertech met the relevant criteria in 10 C.F.R. Parts 20 and 40. After evaluating Powertech's application, as supplemented by its responses to the Staff's RAIs, the Staff found that Powertech met these criteria. The Staff documented its findings in a Safety Evaluation Report (SER) for the Dewey-Burdock Project. The Staff issued its SER in March 2013.¹⁰

D. The Staff's NEPA Review

In accordance with NEPA and the NRC's regulations in 10 C.F.R. Part 51, the Staff has prepared a supplemental environmental impact statement (SEIS) in connection with Powertech's application. The SEIS supplements NUREG-1910, "Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities."¹¹ NUREG-1910 assesses the environmental impacts of ISR operations both generally and on a regional basis, with specific sections focusing on the Western South Dakota-Northeastern Wyoming Region, where Powertech's facility would be located.

⁹ Ex. APP-050. See also Powertech (USA) Inc.'s Response to the Request for Additional Information to Support the Environmental Review of its Application (August 26, 2010) (ADAMS Accession No. ML102380530); Powertech (USA), Inc.'s Responses to the U.S. Nuclear Regulatory Commission (NRC) Staff's Verbal and Email Requests for Clarification of Selected Issues Related to the Dewey-Burdock Uranium Project Environmental Review (November 4, 2010) (ADAMS Accession No. 103140318).

¹⁰ Safety Evaluation Report for the Dewey-Burdock Project Fall River and Custer Counties, South Dakota (ADAMS Accession No. ML13052A182) (March 18, 2013) (Ex. NRC-135). In April 2014, the Staff issued a revised version of the SER, which corrected certain technical references. (Ex. NRC-134.)

¹¹ Exs. NRC-010-A and NRC-010-B.

On November 26, 2012, the Staff issued a draft version of the SEIS for public comment.¹² In the Draft SEIS (DSEIS), the Staff considered the impacts that might result from construction of the Dewey-Burdock facility and wellfields, ISR operations at the site, restoration of the aquifers associated with ISR operations, and decommissioning of the site. The Staff prepared the DSEIS in cooperation with the U.S. Bureau of Land Management (BLM), which manages 240 acres of land within the Dewey-Burdock site. The Staff also consulted with numerous other federal and state agencies, including the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the South Dakota Department of Environment and Natural Resources. In addition, the Staff consulted with numerous American Indian tribes in order to obtain information on culturally significant properties that may qualify for protection under the National Historic Preservation Act, 16 U.S.C. §§ 470 *et seq.* (NHPA).

When the Staff issued the DSEIS, it stated that there would be a 45-day period for the public to submit comments on the document. The Staff also explained, however, that it would attempt to consider any comments received after the formal comment period ended. The Staff received 820 comments from 349 individuals and 31 agencies or organizations. In the end, the Staff was able to accept all comments received on or before March 5, 2013. The Staff therefore effectively provided a 99-day comment period on the DSEIS.¹³

The Staff reviewed each of the comments on the DSEIS, and in certain cases revised DSEIS text in response to comments. While reviewing the DSEIS-related comments, the Staff continued to consult with other agencies regarding Powertech's application. The Staff also continued to independently review environmental issues related to the Dewey-Burdock Project, as well as additional information submitted by Powertech.

¹² Exs. NRC-009-A and NRC-009-B, *Supplemental Environmental Impact Statement for Proposed Dewey-Burdock In-Situ Uranium Recovery Project in Custer and Fall River Counties, SD*, 77 Fed. Reg. 70,486 (November 26, 2012) (Vols. 1 and 2).

¹³ Ex. NRC-008-B at Appendix E, Section E2.4.

On January 31, 2014, the Staff issued the FSEIS for the Dewey-Burdock Project.¹⁴ The FSEIS updates the information in the DSEIS and the Staff's analysis of environmental impacts. The FSEIS also adds an Appendix E, which presents public comments on the DSEIS and the Staff's responses to the comments.

E. The Staff's NHPA Review

As required under the NHPA, the Staff evaluated how properties eligible for inclusion on the National Register of Historic Places (NRHP) may be affected by the Dewey-Burdock Project. In March 2010, the Staff began consulting with numerous American Indian tribes regarding such properties.¹⁵ Appendix A of the FSEIS includes correspondence of the Staff's consultation under the NHPA through November 2013.¹⁶ Table A-1 in Appendix A provides a chronology of the documents associated with the Staff's consultation. In addition, Ex. NRC-015 provides an updated chronology that includes NHPA-related documents postdating the Staff's issuance of the FSEIS.¹⁷

As part of its consultation under the NHPA, the Staff arranged for a field survey of the Dewey-Burdock site.¹⁸ The Staff arranged for the survey so that each of the tribes with whom it was consulting could survey the Dewey-Burdock site for properties of religious or cultural significance to the tribe. After consulting with the tribes for an extended period over an

¹⁴ Exs. NRC-008-A and NRC-008-B, *Final Supplemental Environmental Impact Statement, Proposed Dewey-Burdock Project in Fall River and Custer Counties, South Dakota, for In-Situ Leach Uranium Milling Facilities*, 79 Fed. Reg. 5468 (January 31, 2014). The FSEIS is Supplement 4, Vols. 1 and 2, to NUREG-1910 (Exs. NRC-010-A and NRC-010-B).

¹⁵ Ex. NRC-0021, Initial Section 106 Letters to 17 Tribes Requesting Their Input on the Proposed Action (ADAMS Accession No. ML100331999) (March 19, 2010).

¹⁶ Appendix A includes correspondence related to the Staff's consultation under other acts, such as the Endangered Species Act. The vast majority of the correspondence, however, relates to the Staff's NHPA consultation efforts.

¹⁷ Ex. NRC-015, Dewey-Burdock ISR Project Summary of Tribal Outreach (ADAMS Accession No. ML14099A010).

¹⁸ Ex. NRC-068, Letter Transmitting a Follow-Up Email Pertaining to an Upcoming Field Survey for the Dewey-Burdock Project (ADAMS Accession No. ML13039A366) (February 8, 2013).

appropriate methodology for a field survey, the Staff decided on an approach under which each tribe could send its own representatives to the Dewey-Burdock site. The tribal representatives could then survey the site using the methodology best suited to identifying properties significant to their tribes.

The Staff invited all consulting tribes to participate in the field survey of the Dewey-Burdock site. In April and May 2013, representatives from seven tribes conducted surveys at the site. Several tribes later provided the Staff with information on significant properties at the site, along with their NRHP eligibility recommendations.¹⁹ The Staff used this information to assess how the Dewey-Burdock Project might affect cultural resources. In December 2013, the Staff provided its impact assessment to all consulting tribes for comment.²⁰

Because Powertech has proposed a phased approach to developing wellfields at the Dewey-Burdock site, an approach that is standard in the ISR industry, the Staff worked with the consulting parties to prepare a Programmatic Agreement for the site. Using a Programmatic Agreement in these circumstances is permitted by NHPA regulations.²¹ The purpose of the Programmatic Agreement is to protect not only those historic and cultural properties that may be affected during the initial phase of the Dewey-Burdock Project, but to set forth an approach that will protect properties potentially affected by future phases of the project.

From August 2013 through April 2014, the Staff worked to prepare a Programmatic Agreement in consultation with the tribes, Powertech, BLM, and the South Dakota Historic

¹⁹ Ex. NRC-018-B, Final Appendix for Dewey-Burdock Project PA (ADAMS Accession No. ML14066A350).

²⁰ Ex. NRC-058 and Exs. NRC-061 through through NRC-063. These exhibits include the following documents: Letter to Oglala Sioux Tribe Transmitting TCP Survey Report for Dewey-Burdock Project (ADAMS Accession No. ML13357A234) (December 23, 2013); NRC's Overall Determinations of Eligibility and Assessments of Effects (ADAMS Accession No. ML13343A155) (December 16, 2013); NRC NRHP Determinations (ADAMS Accession No. ML13343A155) (December 23, 2013); Table 1.0 for Draft PA (ADAMS Accession No. ML13354B948) (December 13, 2012). The Staff sent copies of these documents to all consulting tribes.

²¹ 36 C.F.R. § 800.4(b)(2).

Preservation Officer.²² The Staff used the information provided by the consulting tribes, including the field survey results, to develop the Programmatic Agreement. The Staff also sent the consulting parties multiple draft versions of the Programmatic Agreement in order to obtain their input at all stages of the Agreement's development.

On April 7, 2014, the Staff finalized the Programmatic Agreement for the Dewey-Burdock Project.²³ The signatories to the Programmatic Agreement include the NRC, Powertech, the South Dakota State Historic Preservation Office (SHPO), BLM, and the Advisory Council on Historic Preservation (ACHP). Among other issues, the Programmatic Agreement discusses measures that will be used to mitigate impacts to historic or cultural resources that may be affected by the Dewey-Burdock Project. These measures are discussed throughout the Programmatic Agreement, as well as in Appendix B of the Agreement.²⁴

III. The Staff's Expert Witnesses

Haimanot Yilma

Ms. Yilma is the Dewey-Burdock Environmental Project Manager. She works in the Environmental Review Branch in the NRC's Office of Federal and State Materials and Environmental Management Programs. As stated in her resume (Ex. NRC-0003), she holds a Master of Business Administration degree and a Bachelor of Science degree in Chemical Engineering, both from the University of Maryland at College Park. Ms. Yilma has more than 15 years of experience as a project manager and reactor system manager, with knowledge of both reactor and materials programs. She has experience in both the government and private sectors, with particular expertise in power plant operation, uranium recovery operations, and fuel fabrication. As the Environmental Project Manager for the NRC's Dewey-Burdock

²² Ex. NRC-015 at 13–17.

²³ Exs. NRC-018-A through NRC-018-H.

²⁴ Exs. NRC-018-A and NRC-018-B.

application review, she managed the preparation of both the DSEIS and the FSEIS. She also coordinated with the NRC's contractor for the DSEIS and FSEIS, the Southwest Research Institute, on all phases of the SEIS's preparation. Ms. Yilma was directly involved in the NRC's Section 106 tribal consultation activities, participating in informational and consultation meetings with the tribes, attending the tribal surveys of the Dewey-Burdock site, and managing the development of the Dewey-Burdock Programmatic Agreement.

Kellee L. Jamerson

Ms. Jamerson is an Environmental Scientist in the Environmental Review Branch of the NRC's Office of Federal and State Materials and Environmental Management Programs. As stated in her resume (Ex. NRC-004), she holds a Bachelor of Science Degree in Environmental Science from Tuskegee University and is a candidate for a Master's Degree in Environmental Management at the University of Maryland–University College. Ms. Jamerson has eight years of professional experience preparing environmental assessments and supplemental environmental impact statements related to the licensing of uranium recovery, fuel cycle, and spent fuel storage facilities. Her expertise includes NRC environmental regulations and NEPA regulations applying to materials facilities. Ms. Jamerson is currently the Co-Project Manager for the Staff's Dewey-Burdock environmental review, and she was directly involved in the Staff's consultations under the NHPA and the Endangered Species Act.

Thomas Lancaster

Mr. Lancaster is a Hydrogeologist with the Uranium Recovery Licensing Branch in the NRC's Office of Federal and State and Materials and Environmental Management Programs. As stated in his resume (Exh. NRC-005), he holds a Master of Business Administration degree from George Mason University and a Bachelor of Science degree in Geophysical Sciences from Juniata College in Pennsylvania. He holds a Certified Professional Geologist Certificate from the Commonwealth of Virginia and completed graduate courses in geophysical and hydrogeology sciences at Old Dominion University in Norfolk, Virginia. Mr. Lancaster has more

than 25 years of experience as a hydrogeologist and project manager and has extensive knowledge of uranium recovery licensing. He has five years of experience as a Project Manager and Hydrogeologist for uranium recovery licensing reviews at the NRC. He served as the Safety Hydrogeologist and alternate Safety Project Manager for the Staff's Dewey-Burdock licensing review.

James Prikryl

Mr. Prikryl is a Senior Research Scientist in the Geosciences and Engineering Division of the Southwest Research Institute. As stated in his resume (Ex. NRC-0006), he holds Master of Arts and Bachelor of Science degrees in Geology from the University of Texas at Austin. Mr. Prikryl has over 25 years of professional experience in regulatory analysis; field and laboratory investigation of geologic, hydrologic, and geochemical systems; and environmental geophysics. His expertise includes reviewing and preparing environmental impact statements and environmental assessments; conducting innovative field investigations involving uranium ore deposits; and performing site characterization surveys using surface-based geophysical techniques.

Mr. Prikryl has been a principal investigator for numerous NRC environmental impact statements related to uranium mining and milling operations. He contributes to environmental evaluations in the areas of geology, water resources, land use, transportation, socioeconomics, noise, cultural and historic resources, and environmental justice. Mr. Prikryl contributed to the NRC generic environmental impact statement for *in-situ* recovery and milling facilities (Exs. NRC-010-A and NRC-010-B) and to an impact statement addressing post-licensing storage of spent nuclear fuel. He was the Southwest Research Institute's principal investigator for the Dewey-Burdock DSEIS and FSEIS, and the lead researcher for sections on land use, noise, visual and scenic impacts, cost/benefit analysis, and cumulative impacts. He contributed to SEIS sections analyzing geology and soils, water resources, socioeconomics, cultural and historic resources, and environmental monitoring measures.

Amy Hester

Ms. Hester is a Research Scientist in the Geosciences and Engineering Division of the Southwest Research Institute. As stated in her resume (Ex. NRC-007), she holds a Bachelor of Arts degree in Environmental Studies from the University of Kansas. Ms. Hester has over fifteen years of experience as an environmental scientist. She specializes in preparing environmental assessments and environmental impact statements. In that capacity she contributes to environmental evaluations, with a focus on ecology, historic preservation, socioeconomics, and environmental justice. She has contributed to NEPA analyses for the NRC, the U.S. Army Corps of Engineers, the U.S. Department of Energy, and other clients. The NRC projects on which Ms. Hester has worked include the waste confidence decision rulemaking, ISR applications, licensing actions involving nuclear power plants and spent nuclear fuel storage installations, and an environmental topical report for a nuclear fuel reprocessing facility. For the Dewey-Burdock DSEIS and FSEIS, Ms. Hester was the primary author of the ecology sections in each document. She also contributed to the socioeconomics section of the DSEIS and FSEIS.

IV. Procedural History of Contentions

In their hearing requests, the Intervenors submitted a total of 21 contentions raising a variety of safety and environmental challenges to Powertech's application. The Board admitted seven contentions.²⁵ These contentions related to cultural resources (Consolidated Intervenors' Contention A and Oglala Sioux Tribe's Contention 1), baseline groundwater conditions (Contentions B and 2), hydrogeology (Contentions C and 3), and groundwater consumption (Contention 4).

After the Staff issued the DSEIS in November 2012, the Intervenors submitted 18 new or amended contentions. The Board found that each of the Intervenors' previously admitted

²⁵ *Powertech (USA), Inc.* (Dewey-Burdock In-Situ Uranium Recovery Facility), LPB-10-16, 72 NRC 361, 443-44 (2010).

contentions challenged information in the DSEIS that was similar to information in Powertech’s Environmental Report. Thus, the Board found that the contentions “migrated” from the Environmental Report to the DSEIS.²⁶ The Board also admitted three new contentions of the Oglala Sioux Tribe. The Board rejected the Intervenor’s remaining contentions. After the Board combined the Intervenor’s related contentions and split two contentions into subparts, the admitted contentions were as follows:²⁷

- Contention 1A: Failure to Meet Applicable Legal Requirements Regarding Protection of Historical and Cultural Resources.
- Contention 1B: Failure to Involve or Consult All Interested Tribes as Required by Federal Law.
- Contention 2: The DSEIS Fails to Include Necessary Information for Adequate Determination of Baseline Ground Water Quality.
- Contention 3: The DSEIS Fails to Include Adequate Hydrogeological Information to Demonstrate Ability to Contain Fluid Migration and Assess Potential Impacts to Groundwater.
- Contention 4: The DSEIS Fails to Adequately Analyze Ground Water Quantity Impacts.
- Contention 6: The DSEIS Fails to Adequately Describe or Analyze Proposed Mitigation Measures.
- Contention 9: The DSEIS Fails to Consider Connected Actions.
- Contention 14A: Whether an appropriate consultation was conducted pursuant to the Endangered Species Act and implementing regulations.
- Contention 14B: Whether the DSEIS’s impact analyses relevant to the greater sage grouse, the whooping crane, and the black-footed ferret are sufficient.

After the Staff issued the FSEIS, the Intervenor’s re-filed each of their previously admitted contentions. The Oglala Sioux Tribe also filed three new contentions. The Board found that the Intervenor’s previously admitted contentions migrated from the DSEIS to the

²⁶ LBP-13-9, 78 NRC at 50–60 (2013).

²⁷ The following list appears in Appendix A of the Board’s decision. LBP-13-9, 78 NRC at 116.

FSEIS and that these contentions remained in the hearing. The Board rejected, however, the Tribe's new contentions challenging the FSEIS.

More recently, the Tribe and the Staff both filed summary disposition motions on April 11, 2014. The Tribe moved for the Board to rule that the FSEIS's discussion of mitigation measures is inadequate as a matter of law. The Staff moved for the Board to dismiss any safety components in Contentions 2 and 3. The Board denied both motions. In denying the Staff's motion, the Board noted that "the admitted contentions challenge the adequacy of hydrological information in the Staff environmental documents."²⁸ The Board concluded that, "[a]t this juncture [we are] unable to rule as to what extent any safety component that may be lurking in Contention 2 or Contention 3 can be dismissed as a matter of law."²⁹

As a result of the Board's rulings, the scope of this hearing is limited to those issues that have been pled with particularity in Contentions 1, 2, 3, 4, 6, 9, and 14.³⁰

V. Applicable Legal Standards

The following general standards apply to the Board's review of the merits of the Intervenor's NEPA- and NHPA-related claims. The Staff discusses specific standards that support the Staff's position in Section VII below, where the Staff addresses each contention.

A. The Staff's NEPA Review Has a Defined Scope

When preparing an EIS, the Staff must take a hard look at the environmental impacts of the proposed action.³¹ This standard is, however, subject to a "rule of reason." Under NEPA's

²⁸ Order (Denying Motions for Summary Disposition) (June 2, 2014) at 6.

²⁹ *Id.*

³⁰ See *Southern Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), CLI-10-05, 71 NRC 90, 100-01 (2010):

The scope of a contention is limited to issues of law and fact pled with particularity in the intervention petition, including its stated bases, unless the contention is satisfactorily amended in accordance with our rules. . . . Parties and licensing boards must be on notice of the issues being litigated, so that parties and boards may prepare for summary disposition or for hearing. Our procedural rules are designed to ensure focused and fair proceedings.

rule of reason, the Staff need not address every environmental effect that could potentially result from the proposed action.³² Rather, the Staff need only provide “[a] reasonably thorough discussion of the significant aspects of the probable environmental consequences[.]”³³

NRC precedent follows Circuit Court precedent in limiting the scope of the Staff’s NEPA review. “NEPA does not call for certainty or precision, but an *estimate* of anticipated (not unduly speculative) impacts.”³⁴ The proper inquiry is not whether an effect is “theoretically possible,” but whether it is “reasonably probable that the situation will obtain.”³⁵ The Staff “need not address every impact that could possibly result, but rather only those that are reasonably foreseeable or have some likelihood of occurring.”³⁶

As the Commission has emphasized, “[a]n environmental impact statement is not intended to be ‘a research document.’”³⁷ NEPA does not require the Staff to analyze every conceivable aspect of proposed project.³⁸ NEPA also does not require that the Staff commit virtually infinite study and resources to a proposed project.³⁹ Although the Staff can always

³¹ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

³² *Ground Zero Ctr. for Non-Violent Action v. U.S. Dept. of the Navy*, 383 F.3d 1082, 1089-90 (9th Cir. 2004) (citing *NoGWEN Alliance of Lane County, Inc. v. Aldridge*, 855 F.2d 1380, 1385 (9th Cir. 1988)).

³³ *Trout Unlimited v. Morton*, 509 F.2d 1276, 1283 (9th Cir. 1974); *Warm Springs Dam Task Force v. Gribble*, 621 F.2d 1017, 1026–27 (9th Cir. 1980).

³⁴ *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-05-20, 62 NRC 523, 536 (2005) (emphasis in original).

³⁵ *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 49 (1978).

³⁶ *Southern Nuclear Operating Co.* (Early Site Permit for Vogtle ESP Site), LBP-09-07, 69 NRC 613, 631 (2009).

³⁷ *Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), CLI-10-22, 72 NRC 202, 208 (2010) (citing *Town of Winthrop v. FAA*, 533 F.3d 1, 13 (1st Cir. 2008)).

³⁸ *Private Fuel Storage*, CLI-02-25, 56 NRC at 349.

³⁹ *Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 315 (2010) (footnote omitted).

gather more data in a particular area, it “must have some discretion to draw the line and move forward with decisionmaking.”⁴⁰

B. Under the NHPA the Staff Must Make a “Reasonable and Good Faith” Effort to Identify and Evaluate Impacts to Potentially Affected Historic Properties

Under Section 106 of the NHPA, an agency must consider the effects that granting a license will have on any property that is listed in, or eligible to be listed in, the National Register of Historic Places. To help implement this mandate, the NHPA established the ACHP. The ACHP is charged with enforcing Section 106 and issuing implementing regulations.⁴¹

Under the ACHP’s implementing regulations, an agency must make a “reasonable and good faith effort” to identify properties eligible for inclusion on the NRHP.⁴² A “reasonable and good faith effort” at identifying properties may involve approaches such as background research, sample field investigations, or field surveys.⁴³ The agency need not, however, identify every historic property within a project’s area of potential effects.⁴⁴ Nor does the agency need to conduct on-the-ground surveys of this entire area.⁴⁵ In addition, the agency does not need to conduct investigations outside the area of potential effects.⁴⁶

Once the agency has identified properties potentially eligible for the NRHP, it must assess whether there will be adverse effects to these properties and attempt to resolve any adverse effects. When evaluating effects, the agency must (1) consult with the State Historic

⁴⁰ *Id.* at 315.

⁴¹ The NHPA’s implementing regulations are at 36 C.F.R. Part 800.

⁴² Ex. NRC-047, *Meeting the ‘Reasonable and Good Faith Identification Standard in Section 106 Review* http://www.achp.gov/docs/reasonable_good_faith_identification.pdf.

⁴³ *Id.* at 1 (referring to 36 C.F.R. § 800.4(b)(1)).

⁴⁴ Ex. NRC-047 at 2 (“While it may be appropriate in some circumstances to identify all historic properties in the [area of potential effects], it is important to note that the regulations *do not require* identification of all properties.”) (emphasis in original).

⁴⁵ *Id.* at 3.

⁴⁶ *Id.*

Preservation Officer to identify historic properties within the licensed area; (2) consult with the State Historic Preservation Officer to assess the potential adverse effects on historic properties of granting the license; and (3) create a plan to mitigate any potential adverse effects.⁴⁷

An agency may conclude its NHPA review through several means, one of which is a programmatic agreement.⁴⁸ A programmatic agreement is a document that spells out the terms of a formal, legally binding agreement between a federal agency and other interested agencies or persons. A programmatic agreement may be used to implement the Section 106 process in situations where the effects to historic properties cannot be fully determined prior to the approval of an undertaking, such as where an applicant proposes a phased approach to developing its project.⁴⁹ In such cases, the programmatic agreement establishes a process for consultation, review, and compliance with the NHPA.

An agency may choose to coordinate its NHPA review with any NEPA review the agency is conducting. This approach allows an agency to use its draft EIS, for example, to obtain public input on its preliminary findings under both NEPA and the NHPA. An agency need not coordinate the two processes, however, and the agency may decide to issue separate NEPA and NHPA documents.⁵⁰ Under guidance published jointly by the ACHP and the Council on Environmental Quality,⁵¹ this approach is permissible as long as the agency finalizes its NHPA review before issuing its Record of Decision for the proposed action.⁵²

⁴⁷ 36 C.F.R. §§ 800.4, 800.5.

⁴⁸ 36 C.F.R. § 800.4(b)(2).

⁴⁹ See *Hydro Resources, Inc.*, LBP-05-26, 62 NRC 442, 449 (2005) (“To this end, the regulations permit “phased compliance” with section 106 that is “consistent with the . . . schedule for the undertaking” (citing 36 C.F.R. § 800.3(c)).

⁵⁰ Ex. NRC-048, *NEPA and NHPA, A Handbook for Integrating NEPA and Section 106* at 29 (“[W]here a high level of public controversy or complex procedural issues have emerged over the potential impacts to historic properties, an agency might recognize the benefit of keeping the review processes separate so that attention can be focused on managing and resolving discrete controversies.”).

⁵¹ The Council on Environmental Quality is the agency charged with issuing regulations and guidance implementing NEPA.

VI. Staff's Position on Individual Contentions

The Staff addresses each of the Intervenor's contentions below and in its attached testimony. As the Staff explains, it prepared the Dewey-Burdock FSEIS and Programmatic Agreement consistent with the requirements of NEPA and the NHPA. The Intervenor's claims of deficiencies in these documents lack support, and the Board should therefore dismiss the contentions.

A. Contention 1: The Staff Thoroughly Considered Impacts to Historic and Cultural Resources and Consulted in Good Faith with Interested Tribes

In Contention 1A, the Intervenor's argue that the FSEIS inadequately describes how the Dewey-Burdock Project may affect archeological, historical, and traditional cultural resources. In Contention 1B, they argue that in preparing the FSEIS the NRC Staff failed to consult with American Indian tribes as required by NHPA and other laws. The Board should dismiss both parts of Contention 1 because over the past four years the Staff has thoroughly considered impacts to historic properties and consulted extensively with interested tribes. The Staff's substantial efforts are reflected in both the FSEIS and the Programmatic Agreement for the Dewey-Burdock Project, and these efforts satisfy both NEPA and the NHPA.

The Staff's position on Contention 1 draws support not only from the Staff's testimony in this hearing, but from the positions of the ACHP and the South Dakota State Historic Preservation Office (SHPO). These agencies are staffed by experts in the identification and preservation of historic resources. These agencies are also routinely called upon to review other agencies' compliance with the NHPA. In this case, both the ACHP and the South Dakota SHPO are signatories to the Programmatic Agreement the Staff finalized for the Dewey-Burdock Project. In the case of the ACHP, the agency signed the Programmatic Agreement because "based on the background documentation, the issues addressed during consultation, and the processes established in the [Programmatic Agreement], the ACHP has concluded that the

⁵² Ex. NRC-048 at 35.

content and spirit of the Section 106 process has been met by the NRC.”⁵³ In sum, the positions of the ACHP and the South Dakota SHPO strongly support the Staff’s position on Contention 1.

1. Contention 1A: The Staff Evaluated Impacts to Historic Properties as Required under NEPA and the NHPA

The Intervenor argues that the Staff failed to conduct a competent survey of cultural resources that may be affected by the Dewey-Burdock Project. They also argue that the Staff improperly separated its NEPA and NHPA reviews. In addition, the Intervenor argues that the Staff violated NEPA by releasing the FSEIS before concluding its NHPA review. As discussed below, each of these claims lacks support.

a. The Staff Complied with Both NEPA and the NHPA by Making a Good-Faith Attempt to Identify Cultural Resources

The Intervenor argues that there has not yet been a competent cultural resources survey of the Dewey-Burdock site. This is incorrect. As the Intervenor acknowledges, Powertech submitted a Level III archeological survey of the Dewey-Burdock site as part of its initial application.⁵⁴ During its NEPA and NHPA reviews, the Staff also considered other assessments that are relevant to cultural resources.⁵⁵ As the Staff explains in its testimony, in 2011 Powertech conducted evaluative testing on 20 sites within the Dewey-Burdock boundary.⁵⁶ Then, in April and May 2013, representatives from seven American Indian tribes conducted field surveys of the Dewey-Burdock site.⁵⁷ In addition, in 2013 the Staff, in consultation with the South Dakota SHPO and other consulting parties, assessed potential visual impacts to historic

⁵³ Ex. NRC-031, Letter from John Fowler, Executive Director, ACHP, to Waste’ Win Young, Standing Rock Sioux Tribe Historic Preservation Officer (ADAMS Accession No. ML14115A448) (April 7, 2014).

⁵⁴ Ex. APP-009.

⁵⁵ Ex. NRC-001 at A1.3, A1.4, A1.5, A1.7, A1.8.

⁵⁶ Ex. NRC-136-A through NRC-136-C.

⁵⁷ Ex. NRC-019.

properties within a reasonable distance of the Dewey-Burdock site.⁵⁸ The Staff considered the information from all these studies, as well as comments provided by consulting parties and the general public, when assessing impacts to cultural resources under NEPA and the NHPA.

The Intervenor's argue that the results of the tribal field surveys from 2013 should be disregarded because the participating tribal representatives allegedly did not conduct the surveys using any scientifically valid methodology. This claim lacks support. In its testimony, the Staff explains that the tribal representatives conducted the field surveys using conventional transect survey methods.⁵⁹ The tribal representatives used global positioning system equipment to record sites of significance to their tribes, photographed the sites, and took descriptive field notes. The Intervenor's do not cite any standard under which these surveys would be found inadequate to identify cultural resources of significance to the tribes who participated in the surveys.⁶⁰ The ACHP's guidance on identifying historic sites undermines the Intervenor's arguments, because it does not direct any particular methodology for a field survey, nor does it even require an agency to arrange for the type of field survey that the Staff facilitated in this case.⁶¹

Neither the NHPA nor NEPA required the Staff to obtain all possible information on historic resources before reaching a decision on Powertech's application. Under the NHPA, the Staff had to make a "good faith and reasonable effort" at identifying sites eligible or potentially

⁵⁸ Exs. NRC-008-A at 3-91 through 3-93 and 4-177 through 4-181; Ex. NRC-018-B at 4, 6; Ex. NRC-026.

⁵⁹ Ex. NRC-001 at A.1.3, A1.7, A1.8.

⁶⁰ The Intervenor's suggestion that the tribal field surveys lacked a suitable methodology is undermined by the positions the Oglala Sioux Tribe and other consulting tribes have taken on NHPA-related issues. See, e.g., Ex. NRC-064, Letter from John Yellow Bird Steele, President of the Oglala Sioux Tribe, Re: Refusal to Accept Dewey-Burdock In Situ Project Proposal, ADAMS Accession No. ML13026A005 (November 5, 2012) at 2 ("It is self-evident that each tribe will have expertise in recognizing its own sacred sites. *The Oglala Sioux Tribe strongly objects to the use of persons without any expertise in Sioux TCP to identify Sioux TCP.*") (emphasis in original). The Staff received similar input from a number of other tribes. E.g., Ex. NRC-065, ADAMS Accession Nos. ML13036A104 (November 6, 2012) at 1, ¶ 1; and Ex. NRC-066, ADAMS Accession No. ML13036A110 (October 31, 2012) at 2, ¶ 2.

⁶¹ Ex. NRC-047.

eligible for the NRHP. The Staff did so here, as reflected by both the ACHP's and the South Dakota SHPO's decisions to sign the Programmatic Agreement for the Dewey-Burdock Project.⁶² The Staff also complied with NEPA by making repeated attempts to obtain information on cultural resources and by including mitigation measures in the Programmatic Agreement that will help avoid or limit impacts to any unidentified resources. Accordingly, the Staff's identification of cultural resources complies with both the NHPA and NEPA.

b. The Staff Permissibly Separated Its NHPA Review from Its NEPA Review

The Intervenor's argue that the Staff violated NEPA and the NHPA when, in November 2013, it separated its NEPA and NHPA reviews. The Intervenor's do not, however, establish a violation of either statute.

When the Staff issued the DSEIS in November 2012, it was using its NEPA process to satisfy the public participation requirements of the NHPA. This approach, referred to as "substitution," is permitted under NHPA regulations.⁶³ In November 2013, however, the Staff separated its NEPA and NHPA processes.⁶⁴ This approach is also permitted under NHPA regulations.⁶⁵ The Staff notified the consulting parties in advance that it would be separating the two processes, complying with ACHP and CEQ guidance in this area. The Intervenor's thus fail to show any NEPA or NHPA violation resulting from the Staff's decision to separate the two processes.

⁶² Exs. NRC-018-E, NRC-018-G.

⁶³ 36 C.F.R. § 800.8. See also Ex. NRC-064 at 30-33 (describing the substitution process).

⁶⁴ Ex. NRC-070.

⁶⁵ See Ex. NRC-048 at 32, "Terminating the Substitution Process."

c. The Staff Complied with NEPA by Finalizing the Programmatic Agreement before Issuing the Record of Decision

The Intervenor's argue that the Staff violated NEPA because, when the Staff issued the FSEIS, it was still consulting on a Programmatic Agreement for the Dewey-Burdock Project. The Intervenor's have raised this issue previously, both in their FSEIS contentions and when the Tribe filed for summary disposition. As the Staff explained in response to those pleadings, the Staff's Record of Decision, not the FSEIS, is the document with which the Staff concluded its NEPA review.⁶⁶ The Staff did not issue its Record of Decision until April 8, 2014, after it finalized the Programmatic Agreement for the Dewey-Burdock Project. Accordingly, the Staff did not violate either NEPA or the NHPA, because it finalized the Programmatic Agreement while its NEPA process remained open.

The Intervenor's cite federal court decisions holding that an agency cannot defer its consideration of mitigation measures until after the NEPA process is complete. As the Staff has explained previously, these cases are inapposite, because the Staff finalized the Programmatic Agreement *before* issuing the Record of Decision, its NEPA decision document. In fact, the Staff withheld the Record of Decision precisely because it need to take into account the Programmatic Agreement, including the mitigation measures specified in that agreement, before reaching a licensing decision.⁶⁷

The Intervenor's also cite the Commission's decision in *Hydro Resources* as support for their arguments. The Intervenor's mistakenly claim that in *Hydro Resources* the Commission "eventually excused the NRC Staff's NEPA violations where a post-EIS analysis and [NHPA] review was completed before licensing." In fact, the Commission found no fault with the Staff

⁶⁶ See Ex. NRC-048 at 35 (stating that "an agency must complete the NEPA and Section 106 reviews before signing a decision document" but explaining that "[u]nder CEQ regulations, CEs, EAs, FONSI's, and EISs are not decision documents."). See also *Id.* at 17 ("Only the ROD is a decision document under the CEQ regulations.")

⁶⁷ Ex. NRC-048 at 17, 35.

continuing its NHPA review after it finalized the EIS, because the Staff had not yet issued a license to the applicant.⁶⁸ The same situation is involved here, where the Staff issued Powertech a license only after finalizing the Programmatic Agreement for the Dewey-Burdock Project. Rather than suggesting that the Staff violated NEPA in this case, *Hydro Resources* supports the Staff's actions.

2. Contention 1B: The Staff Consulted Extensively and in Good Faith with Interested Tribes

The Intervenor's argue that the Staff failed to consult with all interested tribes as required by the NHPA. The Intervenor's argue that the Staff violated the NHPA's consultation requirements by issuing the FSEIS before finalizing the Programmatic Agreement for the Dewey-Burdock Project. They also argue that the Staff failed to make a good faith effort to seek information from consulting tribes, initiated its NHPA consultation efforts too late, did not consult with the tribes on a government-to-government basis, and failed to implement the federal government's trust responsibility to the tribes.

Regarding the Intervenor's first claim, as explained above, the Staff permissibly issued the FSEIS before finalizing the Programmatic Agreement for the Dewey-Burdock Project. The Record of Decision for the Dewey-Burdock Project, not the FSEIS, is the document with which the Staff concluded its NEPA review. Accordingly, the Staff completed its NHPA review while its NEPA review remained open, and the Staff took into account the findings and mitigation measures described in the Programmatic Agreement when reaching its decision under NEPA. The Staff's approach is consistent with NEPA and the NHPA generally, and also with the joint guidance of the ACHP and CEQ.⁶⁹

The Intervenor's further claim that the Staff did not make a good faith attempt to obtain information on cultural resources from consulting tribes. The Intervenor's argue that the Staff's

⁶⁸ *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), 50 N.R.C. 3, 14 (1999).

⁶⁹ Ex. NRC-048 at 17, 35.

interpretation of NHPA requirements is not entitled to deference. They state that “[t]he Advisory Council on Historic Preservation (“ACHP”), the independent federal agency created by Congress to implement and enforce the NHPA, has exclusive authority to determine the methods for compliance with the NHPA’s requirements.”⁷⁰ In this case, however, the ACHP found that the Staff met the NHPA’s consultation requirements, as did the South Dakota SHPO. While the Staff addresses the Intervenor’s specific arguments at length in its attached testimony,⁷¹ the fact that the ACHP and South Dakota SHPO are signatories to the Programmatic Agreement should be dispositive proof that the Staff consulted as required under the NHPA.⁷² In any event, there is ample other evidence that the Staff consulted extensively under the NHPA, including a 17-page table that captures many of the Staff’s consultation efforts.⁷³

The Intervenor’s next argument is that the Staff began consulting with tribes too late, citing an ACHP regulation stating that the federal agency “shall ensure that the section 106 [consultation] process is initiated early in the undertaking’s planning.”⁷⁴ The Staff began consulting with tribes in March 2010, however, and thereafter consulted with tribes for approximately four years before finalizing its NHPA review. The Intervenor does not cite to any court decision, regulation, or guidance document showing that for the Dewey-Burdock Project the Staff began consulting with tribes too late. The ACHP guidance document cited by the Intervenor contains only general statements to the effect that agencies should consult with tribes “early and often.”⁷⁵ For the Dewey-Burdock application, the Staff began NHPA consultations approximately six months

⁷⁰ Tribe’s FSEIS Contentions (Ex. OST-013) at 11.

⁷¹ The Staff summarizes its NHPA-related consultation efforts in Ex. NRC-001 at A1.13 through A1.19.

⁷² Exs. NRC-018-E, NRC-018-G.

⁷³ Ex. NRC-015.

⁷⁴ 36 C.F.R. § 800.8(a)(1).

⁷⁵ Tribe’s FSEIS Contentions (Ex. OST-013) at 12.

after it accepted the application for detailed review, and four years before it finalized the Programmatic Agreement for the Dewey-Burdock Project. The Staff therefore began consultations early in its review of the Dewey-Burdock application and complied with the NHPA.⁷⁶

Finally, the Intervenor argue that the Staff failed to consult with the tribes on a government-to-government basis and failed to fulfill the NRC's trust responsibility to the tribes. The Intervenor do not, however, cite any standards to support their claim that the Staff did not consult on a government-to-government basis. The Intervenor do not, for example, allege that the Staff consulted with unauthorized tribal representatives, nor do they allege that the Staff failed to correspond with tribal leaders on significant issues within the scope of the NHPA.⁷⁷ The Intervenor likewise fail to cite any law, court decision, or guidance document stating that the federal government's trust responsibility to tribes required the Staff to take particular action when consulting on the Dewey-Burdock Project. In fact, the Intervenor fail to show that the trust responsibility is even relevant to the Staff's review of the Dewey-Burdock application.

In conclusion, between 2010 and 2014 the Staff consulted extensively, and in good faith, on all issues arising under the NHPA.

B. Contention 2: The Staff Adequately Analyzed Baseline Groundwater Quality

The Intervenor challenge the FSEIS's analysis of the baseline groundwater quality in the Dewey-Burdock area. The Intervenor rely on three declarations from Dr. Moran, including

⁷⁶ The Intervenor appear to argue that the Staff *still* has not begun consulting with tribes as required under the NHPA. As the Staff explains above, however, since 2010 it has consulted extensively with the tribes regarding cultural resources. In any event, to the extent this is the Intervenor's claim, they are not raising a timing issue, but a challenge to the adequacy of the Staff's consultation efforts. The Staff refutes these claims above.

⁷⁷ As reflected in Ex. NRC-015, the Staff sent numerous letters to the president of each consulting tribe regarding NHPA-related issues. The Staff also held an NHPA consultation meeting in South Dakota specifically for tribal leaders. Ex. NRC-143..

his Second Supplemental Declaration dated March 17, 2014.⁷⁸ The Intervenor also refer to a declaration from Dr. Richard Abitz that the Tribe submitted with its hearing request.⁷⁹

Contrary to the Intervenor's claims, the Staff analyzed baseline groundwater quality to the extent required under NEPA. The Staff did so by reviewing the information in Powertech's Technical Report, requesting additional information in numerous areas, and evaluating Powertech's RAI responses. Based on this information, the Staff was able to characterize the environment potentially affected by the Dewey-Burdock Project and evaluate how the Project might affect baseline groundwater quality. Although the Intervenor argue that the Staff should have obtained more information in various areas, none of their arguments establishes a violation of NEPA. The Board should therefore dismiss Contention 2.

1. The Intervenor Incorrectly Argue that Background Groundwater Data Must Be Included in the FSEIS

The Intervenor argue that the Staff violated NEPA because the FSEIS does not consider background groundwater data from monitoring wells at the Dewey-Burdock site. The Intervenor argue that although under its license Powertech must obtain such data before beginning ISR operations in specific wellfields, these data should have been included in the Staff's NEPA analysis.

As the Staff explains in its testimony, "baseline" water quality data differ from "background" data.⁸⁰ Baseline water quality describes existing groundwater conditions at an ISR site. Baseline data must be submitted to the NRC under 10 C.F.R. § 51.45(b), which requires that the applicant submit an Environmental Report that describes the affected environment. Baseline data must also be submitted under Criterion 7 in Appendix A of 10 C.F.R. Part 40, which states that an ISR applicant must conduct preoperational monitoring for at

⁷⁸ Dr. Moran's Declarations are included within Exs. OST-011, OST-012, and OST-013.

⁷⁹ Dr. Abitz's Declaration is part of Ex. OST-011.

⁸⁰ Exh. NRC-001 at A2.13.

least one year prior to major site construction. Background data, on the other hand, are used to characterize the quality of groundwater collected from designated wells at an ISR site. These wells are used by an ISR licensee to generate background data before operations in a wellfield begin, as required under Criterion 5B(5) in Appendix A. The background data are not used to characterize the ISR environment generally, but to establish standards for aquifer restoration once activities in the wellfield have ceased.

Although the NRC does not require the applicant to submit background data with its application, this does not mean the NRC lacks sufficient information to consider an ISR project's impacts under NEPA.⁸¹ The baseline data an applicant must submit under § 51.45(b) and Criterion 7 of Appendix A, combined with the applicant's responses to the Staff's RAIs on groundwater quality, allow the Staff to evaluate the quality of groundwater that may be affected by ISR activities and determine how those activities might reasonably affect water quality.

The background data a licensee must provide under Criterion 5B(5) are in fact monitoring data, not baseline information.⁸² To the extent these data show that a proposed change would have impacts different from those considered in the FSEIS, the licensee must seek a license amendment, which will trigger additional NEPA review.⁸³ For that reason, the Staff does not need to evaluate the background data required by Criterion 5B(5) at the time it prepares an EIS.⁸⁴ Rather, the EIS is sufficient as long as it adequately describes the process by which the monitoring data will be obtained.⁸⁵ The Staff describes this process in Condition 11.3 of Powertech's license, thereby complying with NEPA.

⁸¹ Ex. NRC-001 at A2.3.

⁸² Ex. NRC-001 at A2.9, A2.11, A2.13.

⁸³ Ex. NRC-012 at License Condition 9.4(B)(vii).

⁸⁴ *Hydro Resources*, CLI-99-22, 50 NRC at 17.

⁸⁵ *Id.*

In sum, the Staff did not need to consider background data of the type required under Criterion 5B(5) when preparing the FSEIS. Although the Intervenor argue that the Staff is allowing Powertech to defer collecting necessary data until after the FSEIS has been issued, the Staff does not need the data in question in order to assess baseline groundwater quality.

2. The Intervenor Fail to Show that the Staff Needed to Distinguish between Naturally Occurring Contamination and Contamination from Past Mining Operations

The Intervenor argue that when evaluating baseline groundwater quality at the Dewey-Burdock site the Staff needed to describe the extent to which past uranium mining activities affected water quality. Specifically, in paragraphs 57 and 60 of his Supplemental Declaration, Dr. Moran argues that the Staff needed to distinguish between naturally occurring contamination and residual contamination from past mining. Dr. Moran also argues, in paragraph 61, that Table 3.5-4 of the FSEIS, which presents baseline groundwater samples exceeding maximum contaminant levels, is misleading because it does not identify which sites are contaminated as a result of past mining.

The Intervenor do not show any violation of NEPA. As the Staff explains in its testimony, the baseline data in the FSEIS provide a general description of the *existing* environmental conditions in the Dewey-Burdock Project area.⁸⁶ The Intervenor are essentially arguing that the Staff needed to include *pre-baseline* data in the FSEIS's discussion of baseline groundwater quality. Such data are not, however, necessary to determine how the Dewey-Burdock Project itself may affect groundwater quality. In other words, the Intervenor fail to show the Staff needed to take into account the allegedly missing information when defining the environment that may be affected by the Dewey-Burdock Project.

This does not mean, however, that the Staff failed to consider the impacts of past mining activities in the Dewey-Burdock area. In Chapter 5 of the FSEIS, the Staff discusses cumulative

⁸⁶ Ex. NRC-001 at A2.4 through A2.6.

effects,⁸⁷ including effects potentially related to past mining activities in the Dewey-Burdock region.⁸⁸ Cumulative effects are not, however, within the scope of Contention 2. To the extent the Intervenor objected to the Staff's analysis of cumulative impacts from past mining, they were required to raise this issue in their contentions on the DSEIS or FSEIS.⁸⁹

In conclusion, the Staff complied with NEPA by evaluating baseline groundwater quality at the Dewey-Burdock site. The Staff also evaluated cumulative impacts from past mining in the Dewey-Burdock area. When evaluating baseline groundwater quality, however, the Staff did not need to distinguish between naturally occurring contamination and contamination linked to past mining activities.

3. Where the Staff Considered Information in its Review, It Did Not Need to Repeat All the Information in the FSEIS in Order to Comply with NEPA

The Intervenor argues that the FSEIS omits relevant information in several areas. Specifically, in paragraph 61 of his Supplemental Declaration, Dr. Moran argues that Table 3.5-4 of the FSEIS omits important groundwater constituents, as well as groundwater samples with values below the maximum contaminant levels (MCLs). In paragraph 62, Dr. Moran argues that the Staff's discussion of baseline data fails to include all the constituents listed in Table 2.7.3.1 of NUREG-1569 and Table 7.3-1 of the FSEIS.

The Staff considered all these items in its review, thus taking the "hard look" at environmental information required by NEPA.⁹⁰ As the Staff explains in its testimony, Table 3.5-4 includes baseline data on the groundwater constituents that are most important for assessing environmental impacts: arsenic, lead, uranium, radium-226, and gross alpha. Although the

⁸⁷ "Cumulative effect" is the impact on the environment which results from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions. 40 C.F.R. § 1508.7.

⁸⁸ Ex. NRC-001 at A2.4.

⁸⁹ The Board previously rejected the Tribe's DSEIS Contention 7, which challenged the Staff's analysis of cumulative effects.

⁹⁰ Ex. NRC-001 at A2.6, A2.7.

table does not refer to constituents such as selenium, sulfate, and sodium, the Staff discusses these constituents in Section 3.5.3.5 of the FSEIS, “Groundwater Quality.” Although Table 3.5-4 also does not address sample values exceeding MCLs, the table’s title explains why that is so (The table is titled “. . . Samples with Values Exceeding the [MCL] . . .”). Powertech’s application, on the other hand, provides information on sample values below the MCLs, and the Staff refers to those values in the FSEIS—just not in Table 3.5-4.

In its testimony the Staff also addresses Dr. Moran’s claim that the FSEIS’s discussion of baseline water quality fails to consider all chemical constituents listed in NUREG-1569 and FSEIS Table 7.3-1.⁹¹ The Staff did not refer to these constituents in FSEIS Section 3.5.3.5 for the same reason it did not refer to these constituents in Table 3.5-4; that is, because in Section 3.5.3.5 the Staff intended to provide a summary of baseline water quality and a review of constituents that are most relevant to assessing environmental impacts. This does not mean, however, that the Staff failed to consider the other chemical constituents in its environmental review. In fact, Powertech’s application contained analyses of these very constituents, and some of Powertech’s analyses were submitted in response to the Staff’s RAIs on groundwater quality.⁹²

While NEPA requires that the Staff consider relevant environmental information, it does not require the Staff to repeat all this information in the FSEIS.⁹³ In the FSEIS sections relevant to baseline groundwater quality, the Staff refers extensively to the Powertech documents containing the information cited by Dr. Moran, thus satisfying its obligation to disclose relevant information. The Intervenor therefore fail to establish any NEPA violation.

⁹¹ Ex. NRC-001 at A2.7.

⁹² See Ex. APP-015-V at Appendix 3.4-C “Groundwater Quality Data”; and Ex. APP-015-L at Appendix 2.7-G, “Groundwater Quality Summary Tables.”

⁹³ See *Pilgrim*, CLI-10-22, 72 NRC at 208 (“An environmental impact statement is not intended to be ‘a research document’”) (citation omitted).

4. The Intervenor Fail to Show the Staff Needed to Obtain Additional Information in Order to Assess Baseline Water Quality

The Intervenor argue that the FSEIS should have included additional information in several areas relevant to assessing baseline groundwater quality. In paragraph 62 of his Supplemental Declaration, Dr. Moran argues that the listing of baseline constituents should be include analyses of pregnant solutions resulting from leach testing of ores and lixivants. In paragraphs 66-68, Dr. Moran recommends additional or alternative methods for collecting and analyzing groundwater samples that, in his view, would improve data quality. In paragraph 74, Dr. Moran argues that although the FSEIS includes baseline data from all known wells within at least two kilometers of the Dewey-Burdock boundary, this distance should have been extended to two miles.

NEPA requires the Staff to obtain baseline information not as a research exercise, but so that the NRC can evaluate the reasonably foreseeable environmental impacts of the Dewey-Burdock Project. Although Dr. Moran calls for additional information in several areas, he fails to explain why this information is necessary from a NEPA standpoint. Regarding the first alleged deficiency, the Staff did not need for Powertech to conduct leach testing in order to assess how baseline conditions might be affected by ISR operations. Instead, the Staff took into account Table 2.2-1 of the GEIS, which provides a list of constituents and water-quality parameters that are expected to increase as the result of ISR activities and which may cause environmental concerns.⁹⁴ Because the Staff had previously considered the issue raised by Dr. Moran on a generic basis, it did not need to obtain the results of leach rate testing in order to evaluate the environmental impacts of the Dewey-Burdock Project.

The Intervenor likewise fail to show that the Staff should have required Powertech to collect and analyze groundwater samples using different methods, or that the Staff should have insisted on baseline data for all wells within two miles—as opposed to two kilometers—of the

⁹⁴ Ex. NRC-001 at A2.7, A2.15.

Dewey-Burdock area. In both cases Powertech collected data consistent with Staff guidance.⁹⁵ Powertech's sampling and analytical methods follow the procedures described in Section 2.7.3 of the Standard Review Plan for ISR applications, NUREG-1569.⁹⁶ Powertech's collection of data from wells within two kilometers, as opposed to two miles, of the Dewey-Burdock boundary is consistent with guidance in Regulatory Guide 4.14.⁹⁷ In fact, because the NRC developed the two-kilometer guideline to address possible contamination from tailings areas at conventional uranium mills, the two-kilometer guideline provides a conservative testing protocol for ISR sites.⁹⁸ This is because the wellfield bleed at an ISR site, with the associated inward hydraulic gradient, presents less risk of contaminating neighboring groundwater than the continuing sources of contamination at a mill tailings disposal area.

Although the Intervenor refers to Regulatory Guide 4.14 as "outdated," that appears to be solely because it was issued in 1980. The Intervenor does not cite any later studies calling into question the Regulatory Guide's recommendation that applicants gather groundwater data from wells and other sources of drinking water within two kilometers of a proposed site. In fact, as the Staff explains in its testimony,⁹⁹ the two-kilometer guideline was validated by

⁹⁵ Ex. NRC-001 at A2.8, A2.12.

⁹⁶ Ex. NRC-013 at Section 2.7.3. This section provides guidance that is relevant to an ISR applicant's submittal of both its Technical Report and Environmental Report. In other words, Section 2.7.3 explains how an applicant can comply with 10 C.F.R. § 51.45(b), which requires that the applicant submit an Environmental Report that provides, among other information, "a description of the environment affected." See Ex. NRC-013 at Section 2.7.4 (explaining that if the applicant submits the listed information, the Staff may conclude that the applicant has complied with 10 C.F.R. § 51.45).

⁹⁷ Ex. NRC-074. At page 4.14-2, the NRC refers to the two-kilometer guideline. Like NUREG-1569, the NRC developed Regulatory Guide 4.14 with a view toward obtaining information that is relevant to assessing both the safety and environmental impacts of a proposed project. On page 4.14-1, the NRC states, "Information on radiation doses and the radionuclides in a mill's effluents and environment both prior to and during operations is needed by the NRC staff: . . . 4. To evaluate the environmental impact of milling operations, both during operations and after decommissioning."). In other words, the NRC found the 2-kilometer guideline relevant for obtaining information to support both the Staff's safety and environmental reviews.

⁹⁸ Ex. NRC-001 at A2.16.

⁹⁹ Ex. NRC-001 at A2.12.

NUREG/CR-6705, “Historical Case Analysis of Uranium Plume Attenuation” (2001).¹⁰⁰ In this NUREG the Staff found that the average radiological plume dispersion at a mill tailings site was less than two kilometers for the 10-20 ppb contour (including both upgradient and downgradient dispersion). The dispersion of nonradiological contaminants was even more limited. In addition to NUREG/CR-6705, the Staff examined the dispersion of contaminants in a 2009 memorandum, “Staff Assessment of Ground Water Impacts from Previously Licensed In-Situ Uranium Recovery Facilities.”¹⁰¹ The Staff found no reported instance of contamination of any private well either within or beyond two kilometers of any ISR wellfield operating, either historically or currently, under an NRC license.¹⁰²

In conclusion, the Staff obtained sufficient information to describe the affected environment and evaluate how the Dewey-Burdock Project might affect groundwater quality. The Staff complied with NEPA, and the Board should dismiss Contention 2.

C. Contention 3: The Staff Extensively Reviewed the Hydrogeology of the Aquifers in which Powertech Plans to Operate

The Intervenor's argue that the FSEIS does not sufficiently describe the hydrologic and geologic setting of the Dewey-Burdock area. They argue that more information is needed in order to assess how the Dewey-Burdock Project may affect surface water and groundwater. The Intervenor's rely on Dr. Moran's two prior declarations in this hearing, as well as his Second Supplemental Declaration dated March 17, 2014.

Contrary to the Intervenor's' claims, the Staff fully considered the hydrogeologic setting of the Dewey-Burdock Project. The Staff specifically considered geologic features such as faults, fractures, breccia pipes, abandoned wells and boreholes, and other features that could

¹⁰⁰ Ex. NRC-076.

¹⁰¹ Ex. NRC-091.

¹⁰² Ex. NRC-001 at A2.3, A2.12, A2.15.

potentially provide hydrogeologic connections between aquifers.¹⁰³ In the FSEIS the Staff also describes the processes by which Powertech, once it begins ISR operations in specific wellfields, will obtain additional data that is relevant to assessing connections between aquifers.¹⁰⁴ With this information, the Staff evaluated the reasonably foreseeable effects of the Dewey-Burdock Project on water resources, thus complying with NEPA.

In its testimony, the Staff addresses each of the Intervenor's specific claims of deficiencies in the FSEIS. Most of the Intervenor's claims are that the Staff overlooked or did not sufficiently consider certain information that is relevant to assessing the Dewey-Burdock Project's environmental impacts. As the Staff explains, it specifically considered all of the information identified by the Intervenor. The Staff provides a summary of its position below, with references to portions of its testimony in which the Staff's experts address these issues at length.

1. Powertech's Future Submittal of Additional Hydrogeologic Data Addressing Specific Wellfields Does Not Establish Any Deficiency in the FSEIS

As in Contention 2, the Intervenor's argue that the FSEIS is incomplete because it does not include certain information that, by license condition, Powertech will be required to submit in the future. In this case, the Intervenor's argue that the aquifer pump tests and delineation drilling that Powertech must provide under License Condition 10.10 should be performed now, so that the results may be considered in the FSEIS. Dr. Moran makes this argument in several paragraphs of his Supplemental Declaration (e.g., paragraphs 33, 40-42, and 48) as well as in paragraphs 9, 10, and 26 of his Second Supplemental Declaration.

As the Staff explains, it is standard practice for ISR licensees to submit wellfield hydrogeologic data packages after license issuance but before operating in a specific

¹⁰³ Ex. NRC-001 at A3.1, A.3.8.

¹⁰⁴ Ex. NRC-001 at A3.4.

wellfield.¹⁰⁵ In order to begin principal activities in a new wellfield, these data packages must demonstrate that production and injection wells are hydraulically connected to perimeter zone monitoring wells. These packages must also demonstrate that production and injection wells are hydraulically isolated from nonproduction zone monitoring wells. In Powertech's case, License Condition 10.10 specifically describes the information Powertech must include in its wellfield data packages.

The requirement that an ISR licensee submit additional data before operating in specific wellfields does not mean, however, that when preparing its EIS the Staff lacks the information required to comply with NEPA. Under NRC regulations, an ISR applicant must submit detailed baseline information on the hydrogeologic setting of its proposed site.¹⁰⁶ In this case, for example, Powertech submitted extensive information describing the hydrogeology of the Dewey-Burdock area. The Staff considered this information when preparing the FSEIS, and it also reviewed relevant information from numerous other sources.¹⁰⁷ In addition, the Staff included a condition in Powertech's license, License Condition 10.10, which specifically describes the information Powertech must submit for Staff review before beginning principal activities in a new wellfield.¹⁰⁸ To the extent Powertech's new activities would result in impacts different from those considered in the Dewey-Burdock FSEIS, Powertech will need to seek a license amendment, which will trigger additional NEPA review.

Based on the information Powertech submitted as part of its application, the information the Staff considered while independently reviewing Powertech's application, and the limitations

¹⁰⁵ Ex. NRC-001 at A3.9.

¹⁰⁶ 10 C.F.R. § 51.45.

¹⁰⁷ Ex. NRC-001 at A3.19.

¹⁰⁸ The Staff discusses License Condition 10.10 in FSEIS Section 2.1.1.1.2.3.4. For proposed Burdock wellfields 6, 7, and 8, Powertech must not only submit hydrogeologic test packages but obtain NRC approval before beginning extraction in the wellfields. In addition to including the information required for other wellfields, Powertech's test packages must address the partially unsaturated conditions of the Chilson Aquifer in Burdock wellfields 6, 7, and 8.

imposed by License Condition 10.10, the Staff complied with NEPA by evaluating the reasonably foreseeable impacts of the Dewey-Burdock Project. The Staff's approach here is consistent with Commission precedent and with NEPA generally.¹⁰⁹

2. The Staff Thoroughly Considered Geologic or Hydraulic Features that May Provide Interconnections between Aquifers

Through Dr. Moran's declarations, the Intervenors argue that the Staff overlooked or did not sufficiently consider geologic or hydraulic features at the Dewey-Burdock site that may allow contaminants to migrate between aquifers. These features include faults, fractures, historic exploration borings, abandoned wells, breccia pipes, and the directional flow of groundwater. As summarized below, and as explained further in the Staff's testimony, the Staff fully considered each of these features.

In numerous FSEIS sections the Staff addresses features that may provide hydraulic connections between aquifers.¹¹⁰ For example, the Staff addresses these issues in FSEIS Section 3.4.1.2, "Dewey-Burdock Geology." This section includes subsections on "Artificial Penetrations" and "Breccia Pipes," as well as subsections addressing other relevant features of the Dewey-Burdock stratigraphy. In Section 3.4.3, "Seismology," the Staff addresses faults in the Dewey-Burdock area. As the Staff explains, "according to the USGS Quaternary Fault and Fold Database, no capable faults (active faults) with surface expression occur within a 100-km [62-mi] radius from the center of the proposed site[.]"

The Staff also addresses the possibility that oil and gas wells in the Dewey-Burdock area may provide communication between aquifers.¹¹¹ The Staff addresses this issue in Section 3.2.3, "Minerals and Energy." In addition, the Staff considers the interbedded and inter-fingering nature of sediments within the Fall River and Lakota Formations, which host the Dewey-

¹⁰⁹ *Hydro Resources*, CLI-99-22, 50 NRC at 17.

¹¹⁰ Ex. NRC-001 at A3.9, A3.15, A3.24.

¹¹¹ Ex. NRC-001 at A3.8, A3.11.

Burdock ore zone.¹¹² The Staff addresses this issue in Section 2.1.1.1.2.3.2, “Monitoring Wells,” The Staff explains that, in some areas of the Dewey-Burdock site, “multiple orebodies are vertically stacked within the Fall River Formation or the Chilson Member of the Lakota Formation with no substantial confining layers between the orebodies.”

In Section 3.5.3.2 of the FSEIS, “Aquifer Systems in the Vicinity of the Proposed Dewey-Burdock Project,” the Staff addresses the directional flow of groundwater in relevant aquifers.¹¹³ As the Staff explains, Figures 2.7-14 and 2.7-15 in Powertech’s Technical Report show that groundwater in the Fall River and Chilson Aquifers flows from northeast to southwest in the Dewey-Burdock area. The Staff concludes that the directional groundwater flow at the Dewey-Burdock site “is consistent with regional groundwater flow; regional flow moves outward radially from the Black Hills, which results in northeast-to-southwest regional flow in the general vicinity of the proposed project site.”

In addition to addressing these geologic or hydraulic features in various chapters of the FSEIS, in Appendix E the Staff responds to related public comments.¹¹⁴ In Section E5.21.2, “Concerns About In-Situ Recovery and Groundwater Contamination,” the Staff discusses the possibility of cross-contamination between aquifers at the Dewey-Burdock site. The Staff discusses breccia pipes, faults, fractures, and other relevant features.

In sum, the Staff considered each of the geologic features that, according to the Intervenor, the Staff allegedly overlooked. The Staff took these features into account when assessing the environmental impacts of the Dewey-Burdock Project, and it also considered

¹¹² Ex. NRC-001 at A3.9.

¹¹³ Ex. NRC-001 at A3.3, A3.5.

¹¹⁴ Ex. NRC-001 at A3.1, A3.5.

these features when developing the conditions in Powertech's license.¹¹⁵ The Staff therefore complied with NEPA.

3. The Staff Sufficiently Evaluated Powertech's Ability to Contain the Migration of Contaminants from the Area of ISR Operations

The Intervenor argues that the Staff did not adequately consider whether Powertech would be able to prevent contaminants from migrating outside the ore zone. The Intervenor relies on the opinion of Dr. Moran, who makes this claim in paragraph 34 of his Supplemental Declaration.

Contrary to Dr. Moran's claim, the Staff considers this issue at length in the FSEIS.¹¹⁶ The Staff recognizes that for the Dewey-Burdock Project, as with any ISR project, there is the potential for contaminants to migrate outside the ore zone or to the ground surface. The Staff discusses the historical data on these types of excursions at ISR projects in GEIS Section 2.11.4 and summarizes these data in Section E5.13.3 of the Dewey-Burdock FSEIS, "Historic Operational Experience: Excursions, Spills, and Leaks." The Staff also discusses specific features in the Dewey-Burdock area that are relevant to Powertech's ability to limit excursions. The six-page discussion of "Excursions and Groundwater Quality" in FSEIS Section 4.5.2.1.1.2.2 directly addresses these issues. Furthermore, in this same section the Staff discusses commitments Powertech has made to identify additional features, such as improperly plugged boreholes, that may provide pathways for excursions. Finally, in several FSEIS sections the Staff discusses the monitoring programs Powertech will employ to detect—and once detected, remediate—any excursions. For example, the Staff discusses these programs in Section 2.1.1.1.2.3.2, "Monitoring Wells"; Section 2.1.1.1.3.1.3, "Excursion Monitoring"; and Section 7.3.1.2, "Excursion Monitoring."

¹¹⁵ For example, License Condition 10.10(B) requires that before Powertech begin extraction in Burdock wellfields 6, 7, or 8 it submit for Staff review and approval "aquifer test results that address the partially unsaturated conditions of the Chilson Aquifer in these wellfields."

¹¹⁶ Ex. NRC-001 at A3.5, A3.11.

In brief, the Staff complied with NEPA by thoroughly considering Powertech's ability to limit the flow of contaminants from the zone of ISR operations.

4. The Staff Adequately Characterizes the Environment by Distinguishing between Groundwater, Surface Water, Wetlands, and Other Water Sources

The Intervenors argue that the FSEIS does not adequately describe groundwater or surface water resources in the Dewey-Burdock area. The Intervenors further argue that the FSEIS's discussion of these issues is at times unclear or inconsistent. The Intervenors rely on Dr. Moran's opinion, in particular paragraphs 54 through 56 of his Supplemental Declaration.

In its attached testimony, the Staff refutes Dr. Moran's claim that the FSEIS is unclear or inconsistent in describing water resources.¹¹⁷ For example, although Dr. Moran argues that the Staff discusses waters in abandoned mine pits as if they were surface waters, the relevant FSEIS sections prove otherwise. In particular, the Staff explains that the bottom of the Triangle Pit, and possibly the bottom of Darrow Pit #2, are below the potentiometric surface of the Fall River Formation.¹¹⁸ As a result, the bottom of the Triangle Pit is, and the bottom of Darrow Pit #2 may be, hydraulically connected to the Fall River Formation. In other words, the water in the bottom of these mine pits is not surface water, and the Staff did not describe the water that way in the FSEIS.

Dr. Moran also argues that, although the Staff describes several water-filled mine pits on the Dewey-Burdock site, these mine pits do not appear on a map of the Dewey-Burdock site obtained through color infrared (CIR) imagery. According to Dr. Moran, this means the CIR studies are incomplete. As the Staff explains, however, the water-filled mine pits are, in fact,

¹¹⁷ Ex. NRC-001 at A3.15.

¹¹⁸ Ex. NRC-001 at A3.15.

visible on the CIR imagery maps.¹¹⁹ Specifically, these mine pits can be seen in Figure TR RAI 2.7-9-1, which Powertech submitted in response to the Staff's RAIs.

In conclusion, the Intervenor's allege omissions in the FSEIS that do not, in fact, exist. The Staff complied with NEPA when discussing water resources in the FSEIS, and the Intervenor's provide no credible evidence to the contrary.

5. The Staff Reviewed both Powertech's Application and Other Technical Data in Assessing Environmental Impacts

The Intervenor's argue that the Staff's analysis of hydrogeology in the FSEIS consists almost entirely of a review of Powertech's application materials. Through the opinion of Dr. Moran, the Intervenor's argue that the Staff failed to consider other sources of information relevant to assessing features such as faults, fractures, and breccia pipes. Dr. Moran cites a number of reference sources that he believes the Staff should have considered when preparing the FSEIS.

The Staff reviewed numerous reference sources when preparing the FSEIS, including almost all the sources cited by Dr. Moran.¹²⁰ For example, the Staff reviewed numerous reference sources when preparing its discussion in Section 3.4.1.2, "Dewey-Burdock Geology," and Section 3.4.3, "Seismology." The Staff also consulted a number of sources to obtain information on breccia pipes and collapse features. When discussing geologic faults in the Dewey-Burdock area, the Staff consulted, among other sources, the USGS's Quaternary Fault and Fold Database.¹²¹ Although Dr. Moran identifies additional reference sources that he believes are relevant to assessing the impacts of the Dewey-Burdock Project, these sources do not differ materially from those considered by the Staff. For example, the information on breccia

¹¹⁹ Ex. NRC-001 at A3.16.

¹²⁰ Ex. NRC-001 at A3.19, A3.25.

¹²¹ *Id.*

pipes and collapse structures in a 1980 publication cited by Dr. Moran draws primarily from a 1974 publication that the Staff used as a source of information for the FSEIS.¹²²

In addition to arguing that the Staff overlooked certain reference works, Dr. Moran argues that the Staff's conclusions in the FSEIS are inconsistent with the opinions of the experts who authored those works. As the Staff explains in its testimony, this is incorrect.¹²³ The authors of the cited reference works were addressing regional geology or stratigraphy, not the Dewey-Burdock area specifically. None of their works suggests that alluvial aquifers within or surrounding the Dewey-Burdock site are in hydraulic communication with the Inyan Kara Group aquifers (i.e., the Fall River or Chilson Aquifers). Furthermore, Dr. Moran does not cite any CIR imagery maps or other sources showing this to be the case.

In conclusion, the Staff independently reviewed the environmental impacts of the Dewey-Burdock Project. The Staff reviewed Powertech's application materials, requested additional information from Powertech, and consulted a range of reference works. The Staff complied with NEPA by taking a hard look at the available information on hydrogeology and, based on that information, assessing the reasonably foreseeable impacts of the Dewey-Burdock Project.

D. Contention 4: The Staff Fully Considered the Quantity of Groundwater To Be Used during the Dewey-Burdock Project

In Contention 4, the Tribe argues that the FSEIS does not adequately assess the quantity of groundwater to be used during the Dewey-Burdock Project. In particular, the Tribe argues that the Staff failed to include a "water balance" for the Dewey-Burdock Project. The Tribe also argues that the FSEIS lacks other necessary information on groundwater consumption. The Tribe relies on Dr. Moran's Supplemental and Second Supplemental Declarations for its arguments.

¹²² *Id.*

¹²³ Ex. NRC-001 at A3.25, A3.26.

The Staff addresses groundwater consumption in FSEIS Section 4.5.2, “Groundwater Impacts.”¹²⁴ Contrary to the Tribe’s claims, the FSEIS includes a water balance for the Dewey-Burdock Project. As the Staff explains in its testimony, a “water balance” describes and quantifies the flow of water in and out of a system.¹²⁵ The Staff presents a water balance for the Dewey-Burdock Project in Section 2.1.1.1.3.3 of the FSEIS, with Figure 2.1-14 providing a graphic illustration of the water balance. The water balance presented in the FSEIS includes detailed information on production rates, aquifer bleed rates, reinjection rates, makeup water rates, and liquid waste disposal rates for the operations and aquifer restoration phases of the Dewey-Burdock Project.¹²⁶ The Staff further explains that, although Dr. Moran argues that the FSEIS should include “measured data for all water inputs and outputs related the ISR mining process,” this information cannot be obtained until the Dewey-Burdock facility and wellfields are operating.¹²⁷ In other words, the Staff did not include this information in the FSEIS because it is unable to obtain the information at this time.

In its testimony the Staff also responds to each of Dr. Moran’s other claims of deficiencies in the FSEIS. As the Staff explains, for each alleged deficiency Dr. Moran overlooks FSEIS sections relevant to his claim. For example, Dr. Moran argues that the FSEIS lacks long-term water use data for all phases of the Dewey-Burdock Project. The Staff provides this information, however, in FSEIS sections addressing the various phases of the Dewey-Burdock Project.¹²⁸ As another example, although Dr. Moran previously alleged that the DSEIS was unclear as to which aquifer will be the source of long-term, operational phase water, the

¹²⁴ Ex. NRC-001 at A4.1.

¹²⁵ Ex. NRC-001 at A44_.

¹²⁶ Ex. NRC-001 at A4.5.

¹²⁷ Ex. NRC-001 at A4.16.

¹²⁸ Ex. NRC-001 at A4.9.

Staff addresses this issue in FSEIS Section 4.5.2.1.1.2.2 and in comment responses at Sections E5.21.1 and E.5.21.9.¹²⁹

In sum, the Staff complied with NEPA by evaluating the reasonably foreseeable impacts of the Dewey-Burdock Project in the area of groundwater consumption.¹³⁰ The Staff did not need to provide a water balance that includes measured data for all water inputs and outputs related the ISR mining process, because this information cannot be obtained at the preoperational stage of the Dewey-Burdock Project.¹³¹ Because the Staff complied with NEPA, the Board should dismiss Contention 4.

E. Contention 6: The Staff Identified and Evaluated the Effectiveness of Mitigation Measures to the Extent Required under NEPA

The Tribe argues that the FSEIS does not adequately discuss mitigation measures. The Staff and the Tribe recently litigated this issue when the Tribe filed its motion for summary disposition related to mitigation measures. The Board denied that motion.¹³² As the staff explained in its response to the Tribe's summary disposition motion, in the FSEIS the Staff considered mitigation measures to the extent required under NEPA.

1. The Tribe Fails to Account for the Staff's Entire Discussion of Mitigation Measures

The Tribe argues that the Staff's "mitigation measure discussion consists of a multi-page chart which simply lists a series of proposed mitigation measure[s]."¹³³ The Tribe states that, to

¹²⁹ Ex. NRC-001 at A4.7.

¹³⁰ See *Louisiana Energy Services*, CLI-05-20, 62 NRC at 536 ("NEPA does not call for certainty or precision, but an *estimate* of anticipated (not unduly speculative) impacts") (emphasis in original); *Vogtle*, LBP-09-07, 69 NRC at 631 (holding that NEPA does not require the Staff to analyze every conceivable aspect of proposed project).

¹³¹ Ex. NRC-001 at A4.16.

¹³² Order (Denying Motion for Summary Disposition) (June 2, 2014).

¹³³ FSEIS Contentions at 25.

comply with NEPA, each mitigation measure must be described specifically and supported with data showing whether the measure will be effective.

The Tribe implies that Chapter 6, “Mitigation,” contains the Staff’s entire discussion of mitigation measures. In fact, Chapter 6 is only a *summary* of proposed measures.¹³⁴ In Chapter 4 the Staff explains how these measures will reduce environmental impacts in various resource areas.¹³⁵ In Chapter 4 the Staff discusses mitigation measures repeatedly, referring to such measures well over a hundred times. The Staff also refers to mitigation measures in other FSEIS chapters, including Chapter 2, “*In-Situ* Uranium Recovery and Alternatives,” and Chapter 7, “Environmental Measures and Monitoring Programs.” In sum, the Staff discusses mitigation measures far more extensively than suggested by the Tribe, and the Board must consider the Staff’s entire discussion of mitigation measures when ruling on the merits of Contention 6.

1. The Staff Evaluated the Effectiveness of Mitigation Measures to the Extent Required under NEPA

The Tribe argues that the Staff discussed mitigation measures inadequately in the FSEIS because it did not consider whether the measures it identified would be effective. The Tribe cites several decisions from the Ninth Circuit to support its argument.¹³⁶ The Tribe does not, however, explain what those decisions say about *how* an agency evaluates the effectiveness of mitigation measures.

The cases cited by the Tribe, and subsequent cases addressing similar issues, show that an agency considers the effectiveness of mitigation measures by describing how those measures will reduce environmental impacts in a resource area. “The discussion of

¹³⁴ Ex. NRC-001 at A6.2, A6.3.

¹³⁵ Ex. NRC-001 at A6.3.

¹³⁶ FSEIS Contentions (Ex. OST-013) at 22.

effectiveness of mitigation measures does not need to be highly detailed.”¹³⁷ For example, in a recent decision finding that an FEIS prepared by the Bureau of Land Management (BLM) complied with NEPA, the court gave the following examples of how BLM considered the effectiveness of mitigation measures:¹³⁸

- AR 60864 “(Overall, impacts [to air quality], however, would be reduced as the public would have access to fewer miles of unpaved roads and a number of roads would be closed and rehabilitated, decreasing the potential for fugitive dust throughout the Monuments.”)
- AR 60900 (prohibition of off-road vehicle use will “reduce erosion, trampling, vandalism, and other surface disturbing impacts that damage geological and paleontological resources.”)
- AR 60856–57 (prohibiting OHV use and limiting travel on designated roads would “limit impacts to air quality”; use of watering and chemical suppressants would “greatly reduce the amount of dust emissions from maintenance and on haul roads”)
- AR 60869 (“The application of specific mitigation measures identified in activity level planning and NEPA level review would reduce or prevent impacts to water quality.”)
- AR 60883 (“Restoration and vegetation treatment projects aimed at improving vegetation health and cover would reduce erosion potential and increase soil productivity.”)
- AR 60958 (use restrictions on recreational activities and camping “should reduce or eliminate adverse effects to wildlife”)
- AR 60998-61002 (“Restricting surface-disturbing activities to the non-breeding season for Southwestern Willow Flycatchers would eliminate disturbance effects from noise and dust. Direct impacts from loss of habitat would be limited or eliminated as a result of floodplain restrictions”)

This is exactly the type of analysis the Staff provides when discussing mitigation measures in the Dewey-Burdock FSEIS.¹³⁹ For example:

- [Page 4-8] “Mitigation measures, such as performing concurrent reclamation and revegetation of disturbed surface areas, limiting construction of new access and secondary roads, and restricting vehicular traffic in wellfields and land application

¹³⁷ *Moapa Band of Paiutes v. United States BLM*, No. 10-CV-02021-KJB-(LRL), 2011 U.S. Dist. LEXIS 116046 (D. Nev. Oct. 6, 2011).

¹³⁸ *Wilderness Society v. United States BLM*, 822 F. Supp. 2d 933, 943-944 (D. Ariz. 2011) *aff'd*, *Wilderness Society v. BLM*, 526 Fed. Appx. 790, 2013 U.S. App. LEXIS 10708 (9th Cir. 2013).

¹³⁹ Ex. NRC-001 at A6.5.

areas, will reduce the impacts of surface disturbance associated with construction activities for the land application disposal option.”

- [Page 4-10] “Impacts of surface land disturbance will be minimized by mitigation measures, including concurrently reclaiming and revegetating surface disturbed areas, limiting construction of new access roads, and restricting vehicular traffic in wellfields and land application areas.”
- [Page 4-46] “The applicant will implement the mitigation measures described in SEIS Section 4.5.1.1.1.1 to control erosion, stormwater runoff, and sedimentation during decommissioning activities.”
- [Page 4-76] “The applicant will implement mitigation measures to control erosion and stormwater runoff. The NPDES permit will ensure that stormwater runoff will not contaminate groundwater.”
- [Page 4-101] “However, NRC staff considers such chronic direct wildlife exposure to undiluted wastewater unlikely because the applicant’s proposed wastewater controls (e.g., pond design, leak detection and mitigation, pressure monitoring) and SDDENR permitting requirements will limit direct contact that aquatic life and terrestrial wildlife have with wastewater solutions.”
- [Page 4-148] “These mitigation measures will ensure that noise levels remain below guidelines for offsite receptors [e.g., 55-decibel daytime guideline to protect against activity interference and annoyance (EPA, 1974)] and below OSHA regulatory limits for workers in 29 CFR 1910.95.”
- [Page 4-193] “Because construction of aboveground structures will consider topography to conceal plant facilities and infrastructure and mitigation measures (e.g., water application to control fugitive dust) will be implemented to reduce impacts to visual and scenic resources, NRC staff conclude that the visual and scenic impacts from operations for the Class V injection well disposal option will be SMALL.”
- [Page 4-216] “In SEIS Section 4.7.1.1, NRC staff concluded that implementation of mitigation measures will result in fugitive dust emission levels that will not destabilize the air quality of the local area nor change the current attainment status of the air quality surrounding the proposed site areas. However, despite the use of controls, short-term and intermediate fugitive dust emissions are possible when vehicles travel on unpaved roads.”

Accordingly, the Staff analyzed the effectiveness of mitigation measures to the extent required for an EIS. The EISs courts have found inadequate, on the other hand, bear little resemblance to the Dewey-Burdock FSEIS. For example, in one case cited by the Tribe, the court stated:

[C]lose inspection reveals that the EIS does not in fact assess the effectiveness of the mitigation measures relating to groundwater. It states only, “Feasibility and success of mitigation would depend on site-specific conditions and details of the mitigation plan.” *Nothing whatsoever is said about whether the anticipated harms*

could be avoided by any of the listed mitigation measures. This discussion is inadequate.^{140]}

In another case cited by the Tribe, the agency's own expert admitted that the measures identified by the agency were not actually mitigation measures.¹⁴¹ In sum, in none of the cases where the court rejected the agency's EIS was the document comparable to the Staff's FSEIS here.

The Tribe also cites one case in which the court found that the agency complied with NEPA by assigning an "effectiveness rating" ("low," "moderate," or "high") to mitigation measures.¹⁴² But the court did not find that such a rating was necessary in all cases. To the contrary, the court found that, in the EIS before it, the effectiveness rating compensated for a lack of qualitative description as to how mitigation measures would reduce environmental impacts.¹⁴³ In other words, the EIS lacked the types of descriptions the Staff included in the Dewey-Burdock FSEIS. Other courts have confirmed that an agency need not assign an effectiveness rating to mitigation measures.¹⁴⁴

Finally, the Tribe cites several cases providing general statements of NEPA law, such as the statement that mitigation measures must be discussed with "sufficient detail to ensure that environmental consequences have been fairly evaluated."¹⁴⁵ These cases do not by themselves show that the Staff failed to comply with NEPA. Rather, they merely state general

¹⁴⁰ *South Fork Band Council of Western Shoshone of Nevada v. U.S. Dept. of Interior*, 588 F.3d 718, 727 (9th Cir. 2009) (emphasis added).

¹⁴¹ *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1381 (9th Cir. 1998).

¹⁴² *Okanogan Highlands Alliance v. Williams*, 236 F.3d 468, 477 (9th Cir. 2000).

¹⁴³ *Id.* at 476–77.

¹⁴⁴ See *North Alaska Envtl. Ctr. v. Norton*, 361 F. Supp. 2d 1069, 1080 (2005) (citation omitted) ("While it is true that the BLM did not rank the effectiveness of the mitigation measures . . . this Court is nonetheless convinced that the BLM did 'ensure that the environmental consequences [were] fairly evaluated.'").

¹⁴⁵ *Rock Creek Alliance v. U.S. Forest Service*, 703 F. Supp. 2d 1152, 1179–80 (2010); *Natural Resources Defense Council, Inc. v. U.S. Forest Service*, 634 F. Supp. 2d 1045, 1065–66 (2007).

principles of NEPA law. These cases do not help the Tribe's argument, because the Tribe does not connect the cited language to the Dewey-Burdock FSEIS and explain why, in this particular case, the Staff's discussion of mitigation measures is inadequate.

In sum, the Staff fully considered whether mitigation measures would be effective in reducing impacts from the Dewey-Burdock Project.

2. The Staff Did Not Need to Finalize All Mitigation Measures Related to Cultural Resources before Issuing the FSEIS

The Tribe also argues that the Staff violated NEPA because, when the Staff issued the FSEIS, it was still consulting on a Programmatic Agreement for the Dewey-Burdock Project. The Tribe argues that because the Programmatic Agreement contains mitigation measures related to cultural resources, and because the Agreement was not finalized until after the Staff issued the FSEIS, the Staff omitted key information from its NEPA analysis. The Tribe cites several federal court decisions holding that an agency cannot defer its consideration of mitigation measures until after the NEPA process is complete.

The Tribe overlooks that the Staff's Record of Decision, not the FSEIS, is the document with which the Staff concluded its NEPA review.¹⁴⁶ The Staff did not issue its Record of Decision until April 8, 2014, after it finalized the Programmatic Agreement for the Dewey-Burdock Project.¹⁴⁷ Accordingly, the Staff took into account the mitigation measures in the Programmatic Agreement while its NEPA review remained open, thus complying with NEPA. The cases the Tribe cites are inapposite, because the Staff finalized the Programmatic Agreement *before* issuing the Record of Decision, not after its NEPA review was complete.

The Tribe also cites the Commission's decision in *Hydro Resources* as support for its arguments. As the Staff explains in the context of Contention 1 above, in *Hydro Resources* the

¹⁴⁶ See Ex. NRC-048 at 17, 35 (stating that "an agency must complete the NEPA and Section 106 reviews before signing a decision document" but explaining that "[u]nder CEQ regulations, CEs, EAs, FONSI, and EISs are not decision documents.").

¹⁴⁷ Ex. NRC-011.

Commission found no fault with the Staff continuing its NHPA review after it issued the EIS, because the Staff had not yet issued a license to the applicant.¹⁴⁸ *Hydro Resources* supports the Staff's actions in this case, where the Staff completed its NHPA review before issuing its NEPA decision document.

The Tribe further argues that the Staff erred by not disclosing all of the mitigation measures for cultural resources in a NEPA document. The Tribe is effectively claiming that the Staff had to make the Programmatic Agreement part of the FSEIS, but it cites no legal basis for its claim. In fact, an agency is not required to merge the two documents—the only requirement is that the Programmatic Agreement inform the agency's NEPA review.¹⁴⁹ The Staff met that requirement, because it did not conclude its NEPA review until it finalized the Programmatic Agreement for the Dewey-Burdock Project.

The Tribe additionally claims that the Staff did not provide an opportunity for comments on mitigation measures related to cultural resources. The Tribe fails to acknowledge, however, that the Staff actively sought to involve the Tribe in developing these very measures. The Staff sent multiple draft versions of the Programmatic Agreement to the Oglala Sioux Tribe and other consulting parties for comment.¹⁵⁰ The Staff also held several teleconferences or webinars to discuss mitigation measures and other issues related to the Programmatic Agreement.¹⁵¹ In addition, in the DSEIS the Staff discussed mitigation measures that might limit impacts to

¹⁴⁸ See *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-99-22, 50 NRC 3, 14 (1999) (“The new information [related to cultural resources] did not present a ‘seriously different’ view of the environmental impacts. We do not find any legal flaw with its later release and consideration and, therefore, decline to alter the Presiding Officer’s decision.”).

¹⁴⁹ See 36 C.F.R. § 800.4, “Identification of Historic Properties,” at (b)(2) (“The agency official may also defer final identification and evaluation of historic properties if it is specifically provided for in a memorandum of agreement executed pursuant to § 800.6, a programmatic agreement executed pursuant to § 800.14 (b), or the documents used by an agency official to comply with the National Environmental Policy Act pursuant to § 800.8.”).

¹⁵⁰ Ex. NRC-015 at 13-17.

¹⁵¹ Ex. NRC-015 at 15–16.

cultural resources, providing the Tribe and other interested persons an early opportunity to identify measures that might be incorporated in a Programmatic Agreement.¹⁵²

In conclusion, the Staff complied with NEPA by finalizing the Programmatic Agreement before issuing its Record of Decision.

3. The Staff Appropriately Considered Mitigation Measures that Will Be Developed by Other Agencies

The Tribe further argues that the Staff improperly relied on certain mitigation measures that have not been fully developed, and which will be imposed by other agencies. The Tribe does not explain, however, how this violates NEPA. Even where mitigation measures fall within the jurisdiction of the agency issuing an EIS, NEPA does not require the agency to include a fully developed mitigation plan in the EIS.¹⁵³ In the examples the Tribe cites, the mitigation measures fall outside the NRC's jurisdiction. The Tribe fails to explain why it was improper for the Staff to incorporate the available information concerning these measures into its NEPA review.

Furthermore, the Tribe fails to take into account all of the information the Staff provided on mitigation measures. For each of the measures the Tribe identifies, the Staff provides additional information in other sections of the FSEIS. The Staff discusses National Pollution Discharge Elimination Standards (NPDES) throughout the FSEIS. The Staff likewise discusses the statutes and regulations applying to U.S. Fish and Wildlife Service monitoring plans, U.S. Environmental Protection Agency permits, and actions within the jurisdiction of other agencies.

¹⁵² Ex. NRC-009-A at Section 4.9.

¹⁵³ See *Bering Strait Citizens for Responsible Res. Dev. v. United States Army Corps of Eng'rs*, 524 F.3d 938, 955 (9th Cir. 2008). See also *Hydro Resources, Inc.* (P.O. Box 777, Crownpoint, NM 87313), CLI-06-29, 64 NRC 417, 427 (2006) (explaining that an EIS need not contain "a complete mitigation plan" or even "a detailed explanation of specific [mitigation] measures which will be employed" and stating that mitigation measures "need not be legally enforceable, funded or even in final form to comply with NEPA's procedural requirements"). See also *Nuclear Innovation North America LLC* (South Texas Project Units 3 and 4), LBP-11-07, 73 NRC 254, 265 (2011) (explaining that NEPA does not "demand the presence of a fully developed [mitigation] plan" or a "detailed explanation of specific measures which will be employed to mitigate the adverse impacts of a proposed action").

For example, although the Tribe claims that the Staff refers to “vaguely referenced and unspecified sound abatement controls” on page 4-149 of the FSEIS, on this page the Staff actually states, “Noise levels associated with project-related transportation activities on Dewey Road leading to and from the site will be within [Federal Highway Administration] noise abatement criteria at a distance of 480 m [1,575 ft] or greater and will be temporary (1 to 2 years).” Finally, although the Tribe claims that the Staff ignored groundwater mitigation measures, there are in fact numerous FSEIS sections in which the Staff discusses these very measures.¹⁵⁴ The Tribe also overlooks Powertech’s license, which includes conditions requiring that Powertech restore groundwater to NRC standards.¹⁵⁵

In conclusion, the Tribe fails to show any flaw in the Staff’s evaluation of mitigation measures. The Board should therefore dismiss Contention 6.

4. The Staff Sufficiently Considered Mitigation Measures that Might Be Applied to Alternative Actions

Finally, the Tribe argues that the Staff did not sufficiently consider mitigation measures in Chapter 2 of the FSEIS, the chapter discussing alternatives to the proposed action. This argument is not a basis for Contention 6, because the Tribe did not make this argument in its DSEIS- or FSEIS-related contentions.¹⁵⁶ In any event, the Tribe overlooks sections of Chapter 2 in which the Staff addresses mitigation measures. For example:

- [Page 2-63] Following the completion of mining, either by open pit or underground techniques, the mine will be reclaimed. Stockpiled overburden is reintroduced into

¹⁵⁴ Ex. NRC-001 at A6.8. For example, at page 4-56 of the FSEIS the Staff explains that a Class III UIC permit requires that all production, injection, and monitoring wells be cased and cemented to prevent migration of fluids into and between underground sources of drinking water.

¹⁵⁵ See, e.g., Ex. NRC-012 at License Condition 10.6 (requiring Powertech to conduct groundwater restoration activities in accordance with the commitments in Section 6.1 of its license application).

¹⁵⁶ See *Vogtle*, CLI-10-05, 71 NRC at 100–01 (holding that “the scope of a contention is limited to issues of law and fact pled with particularity in the intervention petition, including its stated bases, unless the contention is satisfactorily amended in accordance with [NRC] rules”). Although the Board found that Contention 6 migrated from the DSEIS to the FSEIS, in doing so the Board did not expand the scope of Contention 6. Accordingly, the Tribe’s challenge to the Staff’s discussion of mitigation measures in Chapter 2 of the FSEIS falls outside the scope of the admitted contention.

the mined area, either during or following extraction operations, and topsoil is reapplied in an attempt to reestablish topography.

- [Page 2- 64] The tailings pile is then covered with a thick radon barrier and earthen material or rocks for erosion control.
- [Pages 2-64 and 2-65] When heap leaching is complete, the depleted materials are byproduct material that must be placed in a conventional mill tailings impoundment unless NRC grants an exemption for disposal in place.
- [Page 2-65] Because it is technically more difficult to restore acid mine sites, the use of an acid-based lixiviant was eliminated from detailed analysis in the SEIS.
- [Pate 2-65] Because of the greater consumptive use of groundwater to meet groundwater restoration requirements, the use of an ammonia-based lixiviant was eliminated from detailed analysis.
- [Page 2-66] This method was considered and rejected due to . . . (iv) delay in final restoration and reclamation of the wellfield.

Each of these measures qualifies as “mitigation” under the Council on Environmental Quality’s definition at 40 C.F.R. § 1508.20.¹⁵⁷ Accordingly, the Tribe fails to show that the Staff inadequately considered mitigation measures in its alternatives analysis.

F. Contention 9: The Staff Independently Reviewed Impacts from Powertech’s Related Licensing Actions and Analyzed those Impacts in the FSEIS

The Tribe argues that the Staff violated NEPA by deferring to other agencies’ assessments of the environmental impacts of the Dewey-Burdock Project. In admitting this contention, the Board found the Tribe had raised an issue as to whether the Staff was improperly deferring to the EPA and to South Dakota state agencies by not fully analyzing the impacts of other licensing actions.¹⁵⁸ These actions included the issuance of various permits

¹⁵⁷ 40 C.F.R. § 1508.20 states that “Mitigation” includes:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (e) Compensating for the impact by replacing or providing substitute resources or environments.

¹⁵⁸ The Staff is referring to these other licensing actions as “related actions” rather than “connected actions” because none of the other actions is truly “connected” to the federal action involved here—the NRC’s decision on whether to issue Powertech a license. The “connected action” rule at 40 C.F.R.

Powertech needs to operate injection wells at the Dewey-Burdock Project and dispose of waste generated during operations.

The Tribe fails to show that the Staff violated NEPA when considering impacts from related licensing actions. The Tribe argues that “the FSEIS fails to conduct any NEPA analysis of [Powertech’s] proposal for [the Class III and Class V] injection wells.”¹⁵⁹ This argument ignores almost the entirety of the FSEIS, which the Staff prepared precisely because Powertech seeks to inject lixiviant into underground aquifers (thus requiring a Class III injection permit) and will need to dispose of resulting waste (with one method of disposal requiring a Class V injection permit).¹⁶⁰ The Tribe also cites several FSEIS sections where it alleges the Staff defers its NEPA analysis and relies on future analyses that will be conduct by other agencies. This, however, is a misreading of the FSEIS. In none of the cited sections does the Staff fail to assess the environmental impacts of the proposed action. The Staff cites the permitting processes of other agencies simply to explain how the Staff itself determined what the likely impacts would be in a particular resource area.¹⁶¹ For example, on page 4-69 of the FSEIS the Staff states:

EPA will evaluate the suitability of the proposed deep well injection wells and will only allow deep well injection if the waste fluids can be suitably isolated in a deep aquifer. Consequently, NRC staff determine that the potential environmental impact from the Class V injection well disposal option on targeted deep aquifers below the production zone aquifers will be SMALL.

§ 1508.25(a)(1) exists to ensure that “proposals for . . . actions that will have cumulative or synergistic environmental impact upon a region . . . *pending concurrently before an agency* . . . be considered together.” *Kleppe v. Sierra Club*, 427 U.S. 390, 410 (1976) (emphasis added). Here, there is no other application of this type pending before the NRC.

¹⁵⁹ FSEIS Contentions (Ex. OST-013) at 26.

¹⁶⁰ Ex. NRC-001 at A9.1.

¹⁶¹ Ex. NRC-001 at A9.6, A9.7.

This does not show that the Staff is deferring its assessment of impacts from Class V disposal until some future EPA action, as the Tribe alleges. Rather, it shows that the Staff assessed the impacts of Class V wells on its own, taking into account EPA regulations.

The Tribe's further argues that the FSEIS erroneously relies on Powertech's intent to dispose of liquid chemical waste through a Class V underground injection permit.¹⁶² The Tribe argues that Powertech will not be able to obtain a Class V permit. The Tribe overlooks, however, that the Staff also analyzes the environmental impacts if Powertech's Class V permit application is denied.¹⁶³ In other words, the Staff evaluates the environmental impacts of Powertech disposing of waste through a Class V permit, *and* it evaluates the impacts of Powertech disposing of waste through alternative methods.¹⁶⁴

In conclusion, the Staff independently analyzed the environmental impacts related to Powertech obtaining other licenses for the Dewey-Burdock Project. The Staff's analysis of such impacts complied with NEPA, and the Board should therefore dismiss Contention 9.

G. Contention 14: The Staff Consulted with Other Agencies on Impacts to Wildlife and Analyzed Those Impacts as Required by NEPA

As admitted by the Board, Contention 14A claimed that, when the Staff issued the DSEIS, it had not yet consulted with the U.S. Fish and Wildlife Service as required under the Endangered Species Act. Contention 14B claimed that the DSEIS did not adequately discuss impacts to certain species. The Staff addressed both issues by the time it released the FSEIS, and the analysis in the FSEIS complies with both NEPA and the ESA.

¹⁶² FSEIS Contentions (Ex. OST-013) at 28–29.

¹⁶³ Ex. NRC-001 at A9.8 through A9.10.

¹⁶⁴ As the Staff explains in its testimony, in each section of Chapter 4—Sections 4.2.1.2, 4.3.1.2, 4.4.1.2, *etc.*—it discusses the impacts of Powertech disposing of waste through land application, rather than through Class V injection wells. Ex. NRC-001 at A9.10.

1. Contention 14A: The Staff Consulted as Required under the Endangered Species Act

In admitting Contention 14A, the Board recognized that the NRC staff had consulted with the Fish and Wildlife Service regarding endangered species.¹⁶⁵ The Board noted, however, that the DSEIS did not include documentation showing the Fish and Wildlife Service had confirmed the Staff's finding of no adverse effects to federally threatened, endangered, or candidate species.¹⁶⁶ The Fish and Wildlife Service has since confirmed the Staff's finding. In a September 2013 email to the Staff, a Fish and Wildlife Service biologist stated:

I can confirm that no formal or informal Section 7 consultation is required based upon your determination and we have no records of any federally listed species in the area of the project. Please be aware that this does not apply to migratory birds or bald and golden eagles protected under the Migratory Bird Treaty Act and/or the Bald and Golden Eagle Protection Act.¹⁶⁷

This email shows that the Staff has completed the consultation required under Section 7 of the Endangered Species Act. In its testimony, the Staff provides further evidence that it has completed all necessary consultation.¹⁶⁸ The Staff has therefore resolved the issue that formed the basis for Contention 14A, and the Board should dismiss the contention.

¹⁶⁵ LBP-13-9, 78 NRC at 100.

¹⁶⁶ *Id.* at 100–01.

¹⁶⁷ Ex. NRC-131, E-mail from Terry Quesinberry, Fish and Wildlife Biologist, U.S. Fish and Wildlife Service, to Haimanot Yilma, Environmental Project Manager for Dewey-Burdock, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission. (ADAMS Accession No. ML13256A314) (September 9, 2013). See also Ex. NRC-008-B at Section 1.7.1 (referring to the Fish and Wildlife Service's concurrence regarding the Staff's finding of no adverse effects).

¹⁶⁸ Ex. NRC-001 at A14.1 through A14.4.

2. Contention 14B: The Staff Evaluated Impacts to the Greater Sage-Grouse, Whooping Crane, and Black-Footed Ferret as Required under NEPA

The Board originally admitted Contention 14B as a challenge to the DSEIS. In admitting the contention, the Board found that there was a genuine issue as to whether the Staff sufficiently considered impacts to three species: the Greater sage-grouse, the whooping crane, and the black-footed ferret.

In the FSEIS, the Staff addresses impacts to all three species.¹⁶⁹ For example, in FSEIS Section 3.6.3 the Staff explains that Greater sage-grouse were not observed within 6.4 km [4 mi] of the proposed Dewey-Burdock boundary and that the nearest Greater sage-grouse lek is almost 8 km [5 mi] west of the boundary. In Section 3.6.1.2.2, the Staff provides the location of the nearest sage-grouse lek. In Appendix E (Section E5.22.1), the Staff describes the migration of whooping cranes through the Dewey-Burdock area and explains that the avian monitoring and mitigation plan being developed in connection with Powertech's large-mine application will include mitigation measures to protect cranes. In addition, in FSEIS Sections 4.6.3 and 4.6.1.1.1.4 the Staff explains that construction of the Dewey-Burdock Project will not directly affect current or future populations of black-footed ferrets.¹⁷⁰ The Staff also responds to public comments on threatened and endangered species.¹⁷¹

In its testimony, the Staff further explains how it considered impacts to the Greater sage-grouse, the whooping crane, and the black-footed ferret.¹⁷² As the Staff makes clear, it has

¹⁶⁹ Ex. NRC-001 at A14.5.

¹⁷⁰ Many other FSEIS sections address impacts to protected species. See, e.g., Ex. NRC-008-A at Sections 1.7.1 (Greater sage-grouse, whooping crane, black-footed ferret); 1.7.3.7 (black-footed ferret); 3.6.1.2.3 (Greater sage-grouse, black-footed ferret); 3.8 (black-footed ferret); 4.6.1.1.1.1.2 (Greater sage-grouse); 4.6.1.2.1 (black-footed ferret); 5.6.1 (Greater sage-grouse); and 5.6.3 (whooping crane).

¹⁷¹ Ex. NRC-008-B at Appendix E, Section E5.22.1 through Section E5.22.4.

¹⁷² Ex. NRC-001 at A14.6. through A14.8.

taken a hard look at how the Dewey-Burdock Project may affect these species. The Board should therefore dismiss Contention 14B.

VII. Conclusion

The Board should dismiss each of the Intervenors' contentions and affirm that the Staff's review of the Dewey-Burdock application complied with NEPA and the NHPA.

Respectfully submitted,

*/Signed (electronically) by/
Michael J. Clark
Michael J. Clark
Counsel for the NRC Staff*

*/Signed (electronically) by/
Patricia A. Jehle
Patricia A. Jehle
Counsel for the NRC Staff*

Dated at Rockville, Maryland
this 20th day of June 2014