

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) January 29, 2015

Oglala Sioux Tribe’s Post-Hearing Reply Brief

In accordance with this Board’s Order dated December 10, 2014 (Order Admitting Exhibits, Closing the Record on Contention 3 and Setting Briefing Dates), Intervenor Oglala Sioux Tribe (“OST” or “Tribe”) hereby submits this Post-Hearing Reply Brief with respect to Contentions 1A, 1B, 2, 3, 4, 6, and 9 as previously admitted in this proceeding.

INTRODUCTION AND SUMMARY

The record before the Board, combined with the legal argument provided by NRC Staff and the applicant, demonstrates that neither party has met its burden to demonstrate compliance with the requirements of either the National Environmental Policy Act (“NEPA”) or the Atomic Energy Act (“AEA”). Throughout its post-hearing pleadings, NRC Staff and the applicant fail to acknowledge or rebut the operative facts as asserted by the Tribe and either misstate or misapply the applicable legal tests and standards.

Regarding Contention 1A’s challenge to the analysis of cultural resource impacts, NRC Staff and Powertech point to no evidence in the record that it has conducted the requisite “hard look” under NEPA. Specifically, the record shows that the cultural resources review under NEPA lacked any analysis of Sioux cultural resources. This lack of analysis comes despite express NRC Staff acknowledgment as to the importance of the Sioux input and the lack of any

expertise by those that have to date conducted cultural surveys of the site. Instead of addressing the NEPA legal standards applicable to Contention 1A, both NRC Staff and the applicant rely heavily instead on standards applicable to the National Historic Preservation Act (“NHPA”), which do not equate or substitute for NEPA’s standards. Additionally, with respect to Contention 1B, the record demonstrates that the NRC Staff has not conducted the requisite “reasonable and good faith effort” at consultation required by the NHPA. NRC Staff professes to have addressed the Tribe’s concerns at every turn, but the record squarely refutes that assertion. Similarly, NRC Staff’s attempt to rely on a Programmatic Agreement (“PA”), limited to addressing mitigation of impacts to cultural resources eligible for listing on the National Register of Historic Places (“NRHP”), cannot excuse the lack of reasonable and good faith effort to allow the Tribe identify impacts to, and develop mitigation for, its cultural and historic resources prior to approval of the undertaking.

As to groundwater impacts, NRC Staff and the applicant have failed to provide evidence that a “complete” baseline water quality analysis was provided, or that NEPA’s “hard look” at baseline water quality was conducted. Further, the record is replete with admissions by NRC Staff and the applicant as to the lack of the ability of the Fuson Shale to act as a confining layer. Instead of providing evidence necessary to meet their respective burdens as to confinement, both NRC Staff and the applicant rely instead on future non-public reviews of data yet to be gathered. In contrast, the Tribe has provided well-supported factual and legal arguments, supported by expert testimony, that the existing hydro-geological analyses are insufficient to identify flow pathways, including unplugged and improperly abandoned historic boreholes, faults and fractures, as required by NEPA and NRC regulations. Similarly, NRC Staff has not provided a defensible analysis of water quality impacts.

Lastly, NRC Staff's NEPA evaluation improperly defers analysis of expected impacts to subsequent reviews to be conducted by the U.S. EPA and the State of South Dakota. Instead of NEPA analysis of all known and reasonably foreseeable impacts, NRC Staff uses license conditions to push off the development and review of mitigation measures until a post-license, non-public, process. These tactics shield the licensing action from NEPA disclosure and analysis and illegally deprive the public of the ability to meaningfully participate in NRC Staff's environmental review, contrary to NEPA.

As set forth herein, the Tribe respectfully requests that the Board remand the FSEIS back to the Staff to conduct the necessary analyses and reviews.

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

Contention 1A asserts that NRC Staff failed to adequately analyze cultural and historic resources under NEPA in an environmental document before the license issues. The record demonstrates that NRC Staff failed to conduct the requisite "hard look" because it failed to incorporate any comment or reports from any Sioux into its NEPA analysis, despite acknowledging the cultural significance of the site to the Sioux Tribes, including the OST. In an apparent effort to deflect this fact, both NRC Staff and the applicant continue to center their defense to Contention 1A by making inapt arguments regarding the National Historic Preservation Act ("NHPA"). Contention 1A is a NEPA contention, and the NHPA standards are not applicable.

Under the applicable federal caselaw, "compliance with the NHPA 'does not relieve a federal agency of the duty of complying with the impact statement requirement 'to the fullest extent possible.'"" *Lemon v. McHugh*, 668 F. Supp. 2d 133, 144 (D.D.C. 2009) *quoting*

Preservation Coalition, Inc. v. Pierce, 667 F.2d 851 (9th Cir. Idaho 1982) quoting 42 U.S.C. § 4332. Despite this clear cut rule, NRC Staff goes so far as to argue just the opposite, asking this Board to find full compliance with NEPA because “both the ACHP and the South Dakota SHPO found that the Staff complied with the NHPA.” NRC Staff Response at 8.

The applicant also repeatedly cites to NHPA standards and procedures within the context of its Contention 1A briefing, but fails to point to any evidence that the NRC Staff at any point included any review of the proposed mining area for Sioux cultural resources. See Powertech (USA) Inc.’s Proposed Findings of Fact and Conclusions of Law (“Applicant”), at 36-37, ¶¶ 10.4, 10.6, 10.7; 38-40, ¶¶ 10.13-10.16; 43-44, ¶¶ 10.25-10.26; 46-48, ¶¶ 10.30-10.39. Instead, the applicant proposes that the Board makes factual findings that the surveys conducted by Augustana College was comprehensive and conducted by “experienced and qualified personnel.” Applicant at 33-34, ¶¶ 10.1-10.3; ¶ 10.4. However, this directly conflicts with Dr. Hannus’ own testimony, as set forth in the Tribe’s Initial Brief, that the Augustana team was not qualified to survey the site for cultural sites of the Sioux people, and that additional surveys would be necessary to collect that information. OST Initial Brief at 14, quoting August 19, 2014 Transcript at p. 858, lines 4-8; 12-20; p. 859, lines 18-24. NRC Staff witness Dr. Luhman confirmed the need for additional surveys by qualified personnel. OST Initial Brief at 15, citing August 19, 2014 Transcript at p. 762, line 24 to p. 763, line 6.

Similarly, Dr. Sabastian and Mr. Fosha both testified that they also had no experience in conducting cultural resources surveys. OST Initial Brief at 15-16 citing August 19, 2014 Transcript at p. 846, lines 9-21 (Dr. Sabastian); at p. 867, lines 14-20 (Mr. Fosha). The applicant contends that the testimony of its witness Dr. Sabastian is sufficient to demonstrate compliance with the NEPA requirements. Applicant at p. 51, ¶ 10.45. However, Dr. Sabastian testified at

the hearing that she was specifically hired to work on the project in the context of the NHPA, and not to ensure compliance with NEPA. August 19, 2014 Transcript at p. 785, lines 1-9.

Thus, based on the witnesses' own admissions, the record compels the conclusion that information in the NRC Staff's NEPA cultural resources analysis was not provided by any person with the necessary experience or qualifications.

Tellingly, the applicant's briefing concedes that the "Level III archaeological survey is not designed nor intended to address 'places of religious or cultural significance.'" Applicant at 145. NRC Staff, on the other hand, holds out the applicant's Level III survey as the center-piece of its NEPA and NHPA compliance. NRC Staff Response to Post-Hearing Order at 7-8. Given the applicant's admission, however, that the Augustana analysis was not intended to or designed to survey for cultural resources, the FSEIS fails the "hard look" standard of NEPA for purposes of disclosing and analyzing impacts to cultural resources, and nowhere else is there any evidence of any survey analysis of Sioux cultural resources. This is, as explained in the Tribe's Initial Brief, despite the repeated recognition of the cultural significance of the area to the Sioux, including the Oglala Sioux Tribe. OST Initial Brief at 17-18 citing August 19, 2014 Transcript at p. 774, line 21 to p. 775, line 1 (Ms. Yilma); at p. 771, lines 1-7 (Ms. Yilma); at p. 776, line 22 to p. 777, line 3 (Ms. Yilma); at p. 790, lines 1-17 (Ms. Yilma); at p. 846 line 22 to 847, line 8 (Ms. Yilma); see also Declaration of Wilmer Mesteth (Exhibit OST-015) at ¶¶ 5, 8-17, 20.

In an attempt to escape this significant failure to conduct the necessary "hard look" at cultural resources, the applicant wrongly asserts that "NEPA has no requirements for addressing historic and cultural resources." Applicant at 145, n. 27. This legal assertion is manifestly untrue and a completely unsupportable conclusion of law. In fact, CEQ's NEPA regulations specifically require that the "effects" that must be reviewed in a NEPA document include

“ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative.” 40 C.F.R. § 1508.8. NRC Staff witness Ms. Yilma specifically acknowledged this fact in the hearing. August 19, 2014 Transcript at p. 785, lines 14-19 (“Under NEPA, we’re supposed to be looking at cultural resources. Historical property is a subset of cultural resources and so therefore any information that are provided under the NHPA historical properties are a subset of NEPA review. So we have to consider them under the NEPA review.”). The joint Advisory Council on Historic Preservation (“ACHP”) and Council on Environmental Quality (“CEQ”) NEPA Handbook relied upon by the applicant and NRC Staff includes provisions specifically echoing this point:

WHAT IS A “CULTURAL RESOURCE?”

Effects considered under NEPA include cultural and historic. [40 C.F.R. § 1508.8]. The term “cultural resources” covers a wider range of resources than “historic properties,” such as sacred sites, archaeological sites not eligible for the National Register of Historic Places, and archaeological collections.

Exhibit NRC-048, at 4. Thus, contrary to the applicant’s misguided argument, this Board’s conclusions of law must confirm that NEPA’s “hard look” standard applies to historic and cultural resources.

Lastly, in the absence of an argument that NEPA compliance could have been achieved via the Level III survey, both NRC Staff and the applicant rely on the surveys conducted by other Tribes and the Programmatic Agreement (“PA”) as somehow correcting the lack of any survey analysis of Sioux cultural resources. Applicant at 48-52, ¶¶ 10.40-10.46. However, as conceded by NRC Staff, no Sioux tribal surveys were incorporated into any analysis of cultural impacts. August 19, 2014 Transcript at p. 821, lines 3-7 (Ms. Yilma); at p. 875, lines 6-11 (Ms. Yilma). The NRC Staff’s decision to simply invite Tribes to visit the site for themselves cannot serve to

satisfy NEPA, particularly as here where NRC Staff made no provision for any assurance of proper cultural expertise, proper methodology, scope, or the participation of the relevant Tribal representatives. August 19, 2014 Transcript at p. 847, lines 12-20 (Ms. Yilma); August 19, 2014 Transcript at p. 821, lines 3-7 (Ms. Yilma). Several Tribes, including the Oglala Sioux Tribe, properly rejected these terms as improper and insufficient. FSEIS at 1-25; Exhibit NRC-008-A-1. In the end, these surveys resulted in the collection of information from only three (3) Tribes (none of them Sioux) after which NRC Staff terminated its NEPA review of cultural resources, unilaterally deeming it sufficient. August 19, 2014 Transcript at p. 820, lines 18-25 (Ms. Yilma). This is simply not consistent with the “hard look” requirements of NEPA.

Further, the PA does not include any actual analysis or reasonably developed mitigation plans for cultural resources, but rather sets forth a proposed plan for attempting to gather additional information at a later date and to negotiate as-yet unidentified mitigation measures into a mitigation plan at some point in the future. Exhibit NRC-018-A, at 5-10. Even for these plans, the PA specifically excludes from the effect of its terms all cultural resources that do not rise to the level, in NRC Staff’s view, of eligibility for the NRHP. *Id.* at 6 ¶ 3(k); 9, ¶ 6(l); 11 ¶ 9(g). As a result, neither reliance on the PA nor other tribal surveys represents the “hard look” required by NEPA.

Contention 1B: Failure to Comply with the National Historic Preservation Act (NHPA) Consultation Requirements.

NRC Staff recognizes the Advisory Council on Historic Preservation’s (“ACHP”) admonition that a “reasonable and good faith effort” under the NHPA is fulfilled only where the methodologies employed are “designed so that the federal agency can ensure that it produces enough information, in enough detail, to determine what the undertakings effects will likely be

on historic properties.” NRC Staff’s Response to Pre-Hearing Order (“NRC Staff Response”) at 2 quoting Exhibit NRC-047, *Meeting the “Reasonable and Good Faith” Identification Standard in Section 106 Review* at 2 (emphasis added). In this case, partially as described above with regard to the NEPA failings of the cultural resources surveys and impacts analysis, NRC Staff did not ensure the production of the detailed information necessary to determine the effects on historic properties.

NRC Staff asserts that it complied with this standard, but offers only general assertions that it “consulted extensively under the NHPA” citing its vaunted 17-page Tribal Outreach Summary, which emphasizes quantity over quality. NRC Staff Response at 3-4 citing Exhibit NRC-015. NRC Staff alleges it “invited the tribes to participate in every step of its Section 106 review” (NRC Staff Response at 4), “offered each consulting tribe the opportunity to help identify and evaluate sites potentially affected by the Dewey-Burdock Project” (NRC Staff Response at 4-5), and “asked each consulting tribe to help develop the Programmatic Agreement for the Dewey-Burdock Project” (NRC Staff Response at 5). However, these assertions fail to acknowledge the serious flaws identified in the NRC Staff’s and applicant consultants’ repeated ineffective approaches to accomplishing the surveys and development of the PA with meaningful Tribal participation. See OST Initial Brief at 29-30 citing August 19, 2014 Transcript at p. 793, lines 9-23 (Dr. Sabastian recounting how, despite having no experience in doing so, SRI was asked to prepare two work plans that were deemed unacceptable by the Tribes); OST Initial Brief at 30-31 (recounting NRC Staff’s unilateral rejection of the Tribes’ detailed survey approach without any substantive negotiations); OST Initial Brief at 35 (recounting NRC Staff’s disregard for the substantive input and complaints regarding the PA process and the content of the PA).

When reviewed in its entirety, the record demonstrates that NRC Staff failed its obligations under NHPA regulations at 36 C.F.R. § 800.2(c)(2)(ii)(C) to conduct government-to-government consultation “in a manner sensitive to the concerns and needs of the Indian tribe[.]” Despite this record, NRC Staff posits that it “consulted in a manner that fully recognized the government-to-government relationship between the Federal Government and the tribes,” (NRC Staff Response at 6), “was sensitive to the concerns and needs of the tribes” in conducting surveys of the site (NRC Staff Response at 6), and “fully involved the tribes in preparing the Programmatic Agreement for the Dewey-Burdock Project.” *Id.* The Board should reject such self-serving platitudes where the record demonstrates that NRC Staff left unresolved the consistent and repeated legitimate and supported complaints made by multiple Sioux Tribes as to the consultation process, the methodologies NRC Staff employed in conducting its cultural resources review, and the formulation of the PA.

Notably, in support of the use of the PA to comply with the Section 106 duties, the applicant cites the ACHP regulations at 36 C.F.R. § 800.14(b)(1)(ii) as the legal basis for NRC Staff’s decision to use the PA. Applicant at 28, ¶ 7.5. However, this section specifically requires that the use of a PA is allowable only where “effects on historic properties cannot be fully determined prior to approval of an undertaking.” 36 C.F.R. § 800.14(b)(1)(ii). In this case, no such demonstration has been made, rendering the use of a PA unwarranted.

Both NRC Staff and the applicant rely heavily on a letter from the ACHP to demonstrate compliance with the NHPA. NRC Staff Response at 3; Applicant at 141. However, that letter merely indicated that from the limited information available to it at the time, the ACHP could not conclude that NRC Staff had violated the NHPA. While the ACHP has its role in advising agencies and establishing regulations, it is not the final arbiter of NRC Staff’s compliance with

the Act. That responsibility falls to this Board, which has the benefit of a fully-developed factual record. The applicant concedes this point, as its witness Dr. Sabastian testified that NRC has the authority to determine its compliance with NHPA. Applicant at 141; see also Exhibit APP-063 at 12, ¶ A.23. As demonstrated in the Tribe’s Initial Brief and herein, based on the full and complete factual record, NRC Staff has not demonstrated compliance with the NHPA.

Overall, the record demonstrates that NRC Staff did not design its process so as to ensure it produces enough information, in enough detail, to determine what the undertakings effects will likely be on historic properties and did not meet the “reasonable and good faith” standard of the NHPA. As a result, the Board should invalidate the license and remand to NRC Staff to fulfill its NHPA duties.

Contention 2: Failure to Include Necessary Information for Adequate Determination of Baseline Ground Water Quality

NRC Staff and the applicant submit that the Tribe’s Contention 2 fails because the NRC regulations allow an applicant to provide additional information regarding ground water quality pursuant to 10 C.F.R. Part 40, Appendix A, Criterion 5. NRC Staff Response at 10; Applicant at 147. However, this argument misapprehends the Tribe’s position. The Tribe does not contend, as wrongly asserted by NRC, that the process whereby an applicant must provide a “complete” baseline as required by 10 C.F.R. Part 40, Criterion 7, then provides information pursuant to Criterion 5 for setting groundwater quality standards and establishing upper control limits somehow violates an intervenor’s hearing rights, as was at issue in *Hydro Resources, Inc.*, (P.O. Box 777, Crownpoint, NM 87313), CLI-06-01, 63 NRC 1 (2006). See NRC Staff Response at 9.

Rather, the Tribe challenges NRC Staff and applicant reliance on Criterion 5 as some sort of a defense, where they contend that somehow neither of them must provide the “complete”

baseline data required by Criterion 7 because they will effectively do so at a later time pursuant to Criterion 5. See, i.e., Applicant at 58-59, ¶ 10.70 (asserting that NRC regulations allow for a “phased process for baseline data acquisition”). The Tribe contends that the plain language of Criterion 7 requires the applicant to provide “complete” baseline information, and that the information provided by the applicant in an attempt to comply with Criterion 7, and subsequently relied upon by NRC Staff as their baseline analysis in the FSEIS for NEPA purposes, was not “complete” and thus inadequate to characterize the baseline conditions. See OST Initial Brief at 38-43. As a result, the applicant has failed to demonstrate compliance with Criterion 7 and NRC Staff has failed to demonstrate compliance with NEPA’s “hard look” requirement.

The applicant makes the additional argument that it was limited in its ability to collect baseline information as result of 10 C.F.R. § 40.32(e), prohibiting “construction” prior to the issuance of a license. See, i.e., Applicant at 59, ¶10.71. However, 10 C.F.R. § 40.4 specifically excludes from the definition of “construction” any “preconstruction monitoring to establish background information related to the suitability of the site, the environmental impacts of construction or operation, or the protection of environmental values[.]” Thus, there is no basis for an argument that the construction rule prevented the applicant from complying with the Criterion 7 requirement to collect “complete” baseline information for the site.

Both NRC Staff and the applicant attempt to evade the explicit Criterion 7 requirement for “complete” baseline information by arguing that the baseline information complied with NUREG-1569. NRC Staff Response at 9; Applicant at 148. However, both NRC Staff and the applicant concede that no binding precedent exists for the proposition that a NRC Staff opinion that an operator has complied with NUREG-1569 establishes compliance with Criterion 7 or NEPA. *Id.* Rather, as shown by the Tribe independent from any requirement of Criterion 5 or

NUREG-1569, NRC Staff and the applicant have not met their respective burdens under the NRC regulations and NEPA for providing “complete” baseline or fulfilling the “hard look” mandate. Specifically, the Tribe’s expert witness Dr. Moran provided ample demonstration as to the lack of scientifically-defensible baseline analysis. See OST Initial Brief at 39-42 citing and discussing in depth Dr. Moran’s Opening, Rebuttal, and Hearing testimony detailing the lack of necessary data and methodologies in the characterizing of baseline conditions at the site.

Contention 3: Failure to Include An Adequate Hydrogeological Analysis To Assess Potential Impacts to Groundwater

The arguments presented by both NRC Staff and the applicant with respect to Contention 3 are internally inconsistent and fail to adequately account for the unrebutted evidence in the record that the so-called “confining” Fuson Shale geologic structure is indeed leaky and insufficient to contain the mining fluid. NRC Staff points to the FSEIS as containing information demonstrating that the Fuson Shale possesses the thickness, continuity, and low permeability adequate to contain fluid migration. NRC Staff Response at 14. However, NRC Staff turns right around and concedes that the applicant cannot confirm that the thousands of historic boreholes in the proposed mining areas were properly plugged or abandoned. *Id.* NRC Staff asserts that it remedied this glaring problem by asking the applicant for additional data, but that this included only information confirming that these unplugged boreholes were not resulting in groundwater discharging to the surface. *Id.* This line of reasoning ignores the most salient and relevant question as to whether, and to what extent, there is leakage in the Fuson Shale within and between the below ground aquifers.

In an attempt to answer this most relevant question, NRC Staff relies on pump tests conducted by the applicant in 2008 and TVA in 1979, which both demonstrate conclusively that

there is leakage between the Fall River and Chilson aquifers through the Fuson Shale. *Id.* at 15. This leakage is further admitted by the applicant and NRC Staff as a result of the hydrologic model produced by the applicant. *Id.* See also, OST Initial Brief at 47-50 (discussing in detail and citing numerous admissions of leakage by NRC Staff and applicant witnesses within the August 20, 2014 Transcript). In this way, NRC Staff directly contradicts its own previous assertion that hydrogeologic characteristics of the Fuson Shale are adequate to contain fluid migration. Indeed, NRC Staff admits that this evidence of leakage “raises a concern about the Fuson Shale’s ability to contain fluid migration.” *Id.*

Importantly, as acknowledged by all parties, NRC Staff and the applicant have the burden in this case to show by a preponderance of the evidence that groundwater outside the mining areas can be protected (see Applicant at 151) and “that overlying and underlying aquifers are isolated from the production zone.” See NRC Staff Response at 15-16. The applicant also attempts to insert what appears to be a weaker “reasonable assurance” standard (Applicant at 151), but relies on dicta in doing so, and does not give any indication of how this standard is applied. Notably, NRC Staff nowhere asserts that “reasonable assurance” is a proper standard in this proceeding.

In any case, instead of obtaining through any additional investigation or review of accepted data any evidence to counter the evidence of the lack of hydrological containment, NRC Staff simply agrees to allow the applicant to provide additional information in the future to attempt to show adequate confinement. *Id.* at 15-16. Importantly, any such review and approval of this future information will occur outside of any public, Board, or NEPA review. See Exhibit NRC-008-B; FSEIS at E-51 (“The commenter is correct in stating that wellfield hydrogeologic data packages will not be made available for public review.”). As discussed in the Tribe’s Initial

Brief, given the existing unrebutted evidence of leakage, this scheme fails to meet either NRC Staff's or the applicant's burden. Rather, to simply rely on a review of other data later violates both NEPA's "hard look" requirement and 40 C.F.R. Part 40, Appendix A, Criterion 5(G)(2) ("The information gathered on boreholes must include both geologic and geophysical logs in sufficient number and degree of sophistication to allow determining significant discontinuities, fractures, and channeled deposits of high hydraulic conductivity.").

NRC Staff argues that no other evidence exists of any other potential sources of hydrologic discontinuity in the Fuson Shale apart from unplugged boreholes. NRC Staff Response at 16. However, this assertion contradicts hearing testimony by NRC Staff witness Lancaster who readily admitted that leaky boreholes may be one reason for the leaks, but that others may exist: "I think as I recall their conclusions were it's leaky because of a variety of reasons. And one could be the boreholes not being properly abandoned or not being abandoned at all with the correct procedure for plugging and that sort of thing. We recognize that the pump tests show that there is leakiness." *Id.* at p. 1056, line 25 to p. 1057, line 8.

Further, as also detailed in the Tribe's Initial Brief, Dr. LaGarry and Dr. Moran provided detailed evidence of additional hydrogeologic problems, including such things as faults, fractures, and breccia pipes. OST Initial Brief at 51-54. NRC Staff asserts that its contractors reviewed the applicant's post-hearing borehole disclosures and found "no such evidence." NRC Staff Response at 16. However, the Board should take account of the fact that this review that consisted only of outside contractors was conducted in a single day. Applicant at 13, ¶ 2.43. Further, this review was conducted based on "34 randomly selected drill hole logs" constituting nothing more than a "spot check" of the data. Applicant at 96, ¶ 10.182.

Dr. LaGarry's testimony details the severe deficiencies in the methodology of the "spot check" of a handful of "random" records conducted by NRC Staff contractors during that one day review, and the unreliability of any affirmative conclusions from such a limited and insupportably selected data set. Exhibit OST-029, ¶¶6-11 (Written Supplemental Testimony of Dr. Hannan LaGarry). These failings include no justification or basis for using a methodology that consisted of a "spot-check" of "random" samples (¶¶ 6, 9-10), the failure of NRC Staff contractors to account for the drillers' notes (¶ 8), and the unreliability of any conclusions derived from such an analysis (¶¶ 7, 11). Based on the lack of any scientifically defensible methodology, the Board should reject any reliance on this NRC Staff-sponsored review.

Despite all of this counter evidence, and the admission that leakage occurs, the applicant nevertheless asserts that "all studies and reviews contained in the ROD/administrative record support the proposition that the Fuson Shale exhibits adequate confinement for NRC-licensed ISR operations at the Dewey-Burdock Project site." Applicant at 149. The applicant's argument is simply not credible. The applicant ignores the ample scientific literature that the entire area in which the proposed mine site is situated is replete with geologic discontinuity. See OST Initial Brief at 51-52 (discussing the TVA, USGS, and Gott scientific reports unreasonably ignored by the applicant that show geological faults and fractures throughout the area). The failure to investigate the area, even where leakage is admitted and Dr. LaGarry's post-hearing borehole data review evidences the presence of faults and fractures in the area, is not a sufficient or scientifically-defensible basis to overcome the evidence that such features exist.

Overall, a "commitment" from the applicant to provide relevant data at a future date is not evidence showing, certainly not by a preponderance of the evidence, the ability of the Fuson Shale to isolate the aquifers. This is particularly true here, where there is no dispute that the

Fuson Shale is leaking, and that the source of those leaks remains uninvestigated and unproven. NEPA requires NRC Staff to take a “hard look” at this problem, and NRC regulations require the evidence be in place in “sufficient number and degree of sophistication to allow determining” hydrologic conductivity (Criterion 5G(2)). Neither NRC Staff nor the applicant has met its burden of showing evidence overcoming that provided by the Tribe.

Contention 4: Failure to Adequately Analyze Ground Water Quantity Impacts

The applicant and NRC Staff admit that NEPA and NRC regulations require NRC Staff to conduct its own independent analysis of ground water quantity impacts apart from the State of South Dakota’s water consumption permitting process. NRC Staff Response at 19; Applicant at 152. NRC Staff asserts that it conducted such an analysis in two portions of the FSEIS response to comments section. NRC Staff Response at 21. However, a close review of that material shows that the two sections include largely the same verbatim discussion as the other and largely just regurgitate the claims made in the applicant’s water rights application to the State of South Dakota. The both unsurprisingly result in a stated conclusion that “the water rights permit [to the State] ensures that unappropriated water is available in the aquifer for the use and withdrawal amount specified in the permit.” Exhibit NRC-008-B-2 at §§ E5.21.1 (pages 499-502), E5.21.3 (pages 507-510). These discussions do not constitute an independent “analysis” as contemplated by NEPA.

As detailed in the Tribe’s Initial Brief, supported by the expert testimony of Dr. Moran, the “water balance” purportedly provided by the applicant is not adequate for purposes of effectively determining the water quantity impacts of the proposed mining project. See OST Initial Brief at 57-58.

Contention 6: Failure to Adequately Describe or Analyze Proposed Mitigation Measures

Both NRC Staff and the applicant concede that NEPA requires, at minimum, “a reasonably complete discussion of mitigation measures” under controlling U.S. Supreme Court precedent in *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989). NRC Staff Response at 22; Applicant at 156. However, neither party provides any effective counter to the specific mitigation inadequacies identified by the Tribe. Instead, NRC Staff repeatedly simply references to entire chapters of the FSEIS (Chapters 2, 4, and 7), going so far as to attempt to argue that the FSEIS complies with NEPA simply because “[i]n Chapter 4 the Staff discusses mitigation measures repeatedly, referring to such measures well over 100 times.” NRC Staff Response at 22, 28. However, simple references to the word “mitigation” do not constitute a discussion, let alone a discussion sufficient to satisfy the “reasonably complete” standard. Similarly, where NRC Staff references Staff testimony, a review of that testimony shows the same simple broad references to the entirety of Chapters 2, 4, and 7 of the FSEIS.

In contrast, the Tribe sets forth specific lists of issues for which mitigation measures were not discussed in the required detail, or at all. OST Initial Brief at 63, 71-72. NRC Staff never addresses these issues. Instead, it provides a list of other issues for which it asserts mitigation was adequately discussed in the FSEIS. NRC Staff Response at 25. This list deals only with the issues of surface disturbance, stormwater, wastewater, noise, visual, and air quality impacts, which do not align with the allegations of inadequacies in mitigation discussion levelled by the Tribe. The fact that NRC Staff can point to some mitigation discussion on some of the potential impacts cannot rehabilitate the lack of such discussion with regard to other impacts.

Perhaps the most glaring omission of mitigation discussion occurs with regard to cultural resource impacts. Indeed, the FSEIS defers entirely to a Programmatic Agreement process of

future development of mitigation plans for cultural resources. See Exhibit NRC-008-A, FSEIS at 3-94 ; 4-157; 1-16, 1-22, 5-47, 5-48; Exhibit NRC-008-B, FEIS at E-190, E-197. NRC Staff and the applicant appear to assert that the PA is itself a mitigation measure, and therefore satisfies NEPA for purposes of discussion of cultural resource impacts mitigation discussion. However, a review of that document demonstrates that it lacks any specificity or analysis as to mitigation measures or their effectiveness. Instead, the document provides only for future development of such measures – and even then only for cultural resources that are deemed by NRC Staff to be eligible for listing on the NRHP. Exhibit NRC-018-A, at 6 ¶ 3(k); 9, ¶ 6(l); 11 ¶ 9(g). Such reliance on future mitigation development for a subset of impacts cannot satisfy NEPA’s “hard look” mandate.

With regard to its legal analysis as to the NEPA requirement that an agency evaluate the effectiveness of mitigation, NRC Staff makes a glaring error. NRC Staff relies on *Biodiversity Conservation Alliance v. Bureau of Land Management*, No. 09-CV-08-J, 2010 U.S. Dist. Lexis 62431 (D. Wyo. 2010), although without any pin cite, for the proposition that “[n]either NEPA nor FLPMA impose a procedural requirement for the BLM to verify the efficacy of mitigation measures in order for the BLM to utilize those measures to protect public lands from [undue and unnecessary degradation].” See also Applicant at 22 ¶ 5.14 (citing, but not quoting same). However, the quote pulled by NRC Staff from the text of that case was not from any holding or even discussion of the applicable law from the court, but rather from that court’s simple recitation of an argument made by a party to the case, Encana Oil Gas (USA) Inc. Despite this, NRC Staff inappropriately represents that quote to this Board as a judicial holding. Because the case is unpublished, counsel for the Tribe has attached that decision to this filing in order so that

the Board may properly review and dispense with the case, as the actual holding makes no direct discussion of the efficacy of mitigation issue.

Regardless of NRC Staff's the misapplication of the law, the fact remains that NEPA does require an analysis of the effectiveness of mitigation measures. NRC Staff asserts that the discussion of effectiveness need not be detailed, or included at all where they are "obvious". NRC Staff Response at 24. The Tribe's legal citations provide the appropriate standard, that "broad generalizations and vague references" are insufficient. OST Initial Brief at 66 (citing *Neighbors of Cuddy Mountain*, 137 F.3d 1372, 1380-81 (9th Cir. 1998)). Further, as discussed, for many of the impacts of the proposed mine at Dewey-Burdock, no mitigation discussion occurred at all, rendering the corollary conclusion that no effectiveness discussion was presented indisputable.

Overall, as discussed in great detail in the Tribe's Initial Brief, NRC Staff has not met its burden of demonstrating compliance with NEPA's requirements for discussion of mitigation and its effectiveness.

Contention 9: Failure to Consider Connected Actions

NRC Staff and the applicant concede that an agency may not simply defer to another agency's analysis, but rather must independently review the information and come to its own conclusions. NRC Staff Response at 29; Applicant at 152. In this case, NRC Staff admits that it could not defer to the U.S. EPA's underground injection control permit analysis because it has not yet been conducted. *Id.* at 29. Nevertheless, in the making its determination in the FSEIS as to the impact to groundwater from the injection of the disposal fluids into the aquifer, NRC Staff relied entirely on EPA's as-yet-unprepared analysis:

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 determines 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.

Exhibit NRC-008-A, FSEIS at 4-69. NRC Staff cites to its written witness testimony of Ms. Yilma and Ms. Jamerson as demonstrated the proper discussion in the FSEIS. NRC Staff Response at 30, citing Exhibit NRC-001 at A9.1 to A9.11. In that testimony, however, NRC Staff witnesses quote the FSEIS at 4-69 referenced above and then refer to FSEIS 4-100 through 4-102 as having the requisite discussion. Exhibit NRC-001 at A9.3. However, a review of the FSEIS at 4-100 through 4-102 reveals that the entire discussion is of surface impacts, without any review of any impacts or mitigation for subsurface impacts. This again shows how NRC Staff improperly simply deferred to a future U.S. EPA analysis to assess the groundwater impacts of the applicant's injection of liquid wastes through an injection well.

NRC Staff made the same error with regard to the impacts to surface water pollution impacts associated with State of South Dakota's NPDES permitting. NRC Staff cites to testimony of its witness, including Exhibit NRC-001 at A9.6. NRC Staff Response at 35. However, in that testimony, NRC Staff refers to the FSEIS and relies entirely on the State's future analysis of the surface water pollution impacts, including the future development of a stormwater pollution management plan:

For example, at page 4-45 of the FSEIS we explain that Powertech must obtain construction and industrial stormwater NPDES permits in accordance with regulations issued by the South Dakota Department of Energy and Natural Resources. The NPDES permit requirements control the amount of pollutants discharged to surface water bodies, such as streams, wetlands, and lakes. As part of the NPDES permit, Powertech will have to implement a stormwater pollution management plan. This plan will require that Powertech detain and treat stormwater runoff to ensure that the runoff does not contaminate surface waters and wetlands. In addition, Powertech has committed to implementing mitigation measures to control erosion and sedimentation in its stormwater pollution management plan. Because the NPDES permit has not yet been submitted to the

South Dakota Department of Energy and Natural Resources, however, the Staff was unable to describe the specific details of the NPDES permit application in the FSEIS. Nonetheless, **because Powertech agrees to comply with all NPDES permit requirements for discharge into surface waters, the Staff was able to conclude that the environmental impacts associated with stormwater runoff will be small.**

Exhibit NRC-001 at A9.6 (emphasis added).

Despite NRC Staff's attempts to argue that it did indeed look at the impacts and conduct its own review, the record demonstrates otherwise. This failure applies not only to the EPA Class V permit, but the Class III permit as well, along with the Subpart W permit and the South Dakota NDPEs permit. The evidence showing the lack of adequate independent analysis for all of which were discussed in detail in the Tribe's Initial Brief. OST Initial Brief at 75-79. NRC Staff has not met its burden by a preponderance of the evidence that it did not inappropriately simply defer to other agencies' analyses of the impacts.

CONCLUSION

For the foregoing reasons, and as discussed in the Tribe's Initial Brief, NRC Staff has not carried its burden to show NEPA compliance and the applicant has not carried its burden to show compliance with the Atomic Energy Act requirements found in Part 40 Appendix A, and therefore the FSEIS and license should be remanded back to NRC Staff to conduct the requires analyses and review.

Respectfully Submitted,

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Dated at Lyons, Colorado
this 29th day of January, 2015

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))	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Post-Hearing Reply Brief in the captioned proceeding were served via the Electronic Information Exchange (“EIE”) on the 29th day of January 2015, and via email to those parties for which the Board has approved service via email, which to the best of my knowledge resulted in transmittal of same to those on the EIE Service List for the captioned proceeding.

/s/ signed electronically by _____

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