

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

**BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of:	)	
	)	
	)	Docket No.: 40-9075-MLA
POWERTECH (USA), INC.	)	
	)	Date: December 4, 2014
(Dewey-Burdock In Situ Uranium Recovery	)	
Facility)	)	
_____	)	

**POWERTECH (USA), INC. RESPONSE TO THE OGLALA SIOUX TRIBE’S  
NOVEMBER 21, 2014, MOTION TO ADMIT ADDITIONAL TESTIMONY AND  
EXHIBITS**

On November 21, 2014, the Oglala Sioux Tribe (Tribe) submitted a Motion to Admit Additional Testimony and Exhibits accompanied by supplemental testimony from Dr. Hannan LaGarry and additional exhibits comprised of copies of confidential borehole log data disclosed to the Tribe under an amended protective order approved by the Atomic Safety and Licensing Board (hereinafter the “Licensing Board”) on September 12, 2014. In response to this Motion, Powertech (USA), Inc. (Powertech) hereby submits this Response and respectfully requests that the Licensing Board find that the Tribe’s supplemental testimony and exhibits do not warrant modification of the record of decision (ROD) and do not require supplementation of the Safety Evaluation Report (SER) or the Final Supplemental Environmental Impact Statement (FSEIS).

**I. PROCEDURAL HISTORY**

From August 19-21, 2014, the Licensing Board held an evidentiary hearing in Rapid City, South Dakota to hear argument and testimony regarding seven (7) admitted contentions in this proceeding. In addition to hearing this argument and testimony, the Licensing Board also

heard oral argument on procedural motions regarding the applicability of mandatory disclosure requirements under 10 CFR § 2.336 to borehole log data possessed by Powertech prior to submission of its United States Nuclear Regulatory Commission (NRC) combined source and 11e.(2) byproduct materials license application and additional borehole log data that were acquired prior to or after the evidentiary hearing.

On September 8, 2014, the Licensing Board held that Powertech should disclose these borehole logs to both Consolidated Intervenors (CI) and the Tribe for review and for potential submission of supplemental testimony under Contention 3. Pursuant to a protective order amendment approved by the Licensing Board on September 12, 2014, CI and the Tribe were given access to paper borehole log data at Powertech's Edgemont office and were shipped DVD copies of all digitized logs required to be disclosed on September 12, 2014.

On October 9, 2014, the Tribe and CI submitted a motion requesting an extension of time within which to file supplemental testimony until January 9, 2015, on Powertech's disclosures dated September 12, 2014. Powertech opposed this motion and NRC Staff opposed this motion in part by stating that an extension of up to three (3) weeks would be acceptable. On October 22, 2014, the Licensing Board granted CI and the Tribe an additional thirty (30) days or until November 21, 2014, to submit additional testimony/exhibits on Contention 3. Thus, the deadline to submit additional testimony/exhibits on Contention 3 related to the borehole log data was extended thirty-eight (38) days from the original due date of October 14, 2014.

On October 14, 2014, NRC Staff submitted a Motion to Admit Testimony and Exhibits regarding Powertech's borehole log data disclosures. In that Motion, NRC Staff specifically notes that:

“Powertech’s recent disclosures largely support, and in no way contradict, the Staff’s findings in the FSEIS. These disclosures fail to support the Intervenor’s contentions, and they serve only to confirm that when preparing the FSEIS the Staff complied with the National Environmental Policy Act.”

NRC Staff Motion at 2.

The same day, the Tribe filed a Motion to Admit Additional Exhibits but did not file any additional supplemental testimony. The Tribe’s Motion consisted of a three (3) page document with claims that the submitted supplemental exhibits support specific points offered previously. The Tribe’s Motion also did not offer any supplemental argument or testimony showing why the disclosed data should result in modification of NRC’s ROD for the Project. On October 24, 2014, Powertech and NRC Staff submitted responses to the Tribe’s Motion to admit additional exhibits. On the same date, Powertech submitted a response to NRC Staff’s supplemental testimony and exhibits and concurred with NRC Staff’s conclusions regarding further evaluation of the borehole log data disclosures. Neither the Tribe nor CI filed a response to NRC Staff’s supplemental testimony and exhibits by the October 24, 2014, deadline.

On November 21, 2014, the Tribe submitted the instant Motion seeking to admit the supplemental testimony of Dr. LaGarry and reproduced copies of specific borehole log data. In this Response, Powertech does not contest the admission of Dr. LaGarry’s supplemental testimony and the proffered borehole log documents into evidence as confidential business information. However, by this Response, Powertech offers the answering testimony of Messrs. Frank Lichnovsky, Powertech’s Chief Geologist, and Hal Demuth of Petrotek Engineering Corporation. Both of these expert witnesses have previously offered written and oral testimony in this proceeding. By this Response, Powertech respectfully requests that the Licensing Board admit this answering testimony and accompanying exhibits into evidence as Powertech Exhibits APP-074 through APP-088 pursuant to 10 CFR § 2.337.

## II. ARGUMENT

While it believes that the attached answering testimony of Messrs. Lichnovsky and Demuth addresses all aspects of the Tribe's November 21, 2014, Motion and associated testimony and exhibits, Powertech believes it is worthwhile to highlight several key points elaborated upon in this answering testimony.

As a general matter, Powertech's expert witnesses evaluated the scope of Dr. LaGarry's testimony and find that his review does not represent an appropriate evaluation of necessary data to support the concerns raised by CI and the Tribe. As stated by Messrs. Lichnovsky and Demuth, "[i]t is interesting to note that...his observations apparently were confined to the lithology logs and handwritten geologists notes...The almost complete disregard for geophysical logs, both in paper form and the 3,075 digitized logs provided on DVD, is noteworthy, since it was geophysical logs...that were the subject of discussion during the evidentiary hearing...."

Powertech Exhibit APP-074 at 3, ¶ A.5. Further, Messrs. Lichnovsky and Demuth state:

"Geophysical logs provide actual measurements of the various properties of the subsurface strata using calibrated instruments. In other words, they provide 'hard data' that can be interpreted at any time by qualified and experienced professionals. Lithology logs and handwritten geologist's notes from 30 to 50 years ago, on the other hand, are subjective observations by persons whose qualifications and experience we know absolutely nothing about."

*Id.*

Based on their review combined with the conclusions of the SER and FSEIS, Messrs.

Lichnovsky and Demuth conclude that:

"To suggest that there is a lack of geologic isolation sufficient to contain fluid migration at the Dewey-Burdock Project based on geologist's notes written on 12 lithology or geophysical logs ignores the significant amount of hard, *replicable data* presented in the license application and evaluated in the FSEIS that demonstrates that there is adequate confinement to safely conduct uranium ISR."

*Id.* (emphasis added).

With respect to uncased boreholes and Dr. LaGarry's opinion that his review shows one hundred and forty (140) instances of "open, uncased holes," the Tribe's supplemental testimony demonstrates that its review of the borehole log data was based on flawed assumptions and a lack of professional knowledge of exploratory drilling. As stated by Mr. Lichnovsky, "[i]n exploration drilling, almost no holes are 'cased'... Only in rare instances is casing used." *Id.* at 4, ¶ A.6a. Mr. Demuth notes that Dr. LaGarry's review is flawed because "exploration drilling and logging using uncased boreholes is the standard method used in the mining and oil/gas industries." Powertech Exhibit APP-074 at 4, ¶ A.6b. Mr. Demuth also notes that "State plugging standards apply regardless of whether the borehole was constructed completely as an open hole, or whether surface casing was used in specific intervals. Therefore, 'uncased' holes do not increase or decrease the potential for communication; this is determined by hole plugging methods." *Id.* at 5, ¶ A.6b. This flawed review and analysis performed by Dr. LaGarry and Mr. Demuth's extensive experience with ISR projects leads him to conclude:

"Dr. LaGarry's assertion that the historical exploration holes are allowing unrestricted communication between water-bearing strata is completely unfounded in this geologic environment and with the drilling methods employed. In my opinion, this demonstrates that Dr. LaGarry lacks a fundamental understanding of the site geology and drilling methods used."<sup>1</sup>

*Id.* at 4-5, ¶ A.6b.

Mr. Demuth supports his conclusion with several references to Powertech's license application and the FSEIS, as well as NRC-approved procedures for identifying and addressing potential issues in proposed wellfields due to unplugged boreholes.<sup>2</sup> *See* Powertech Exhibit APP-074 at 5-

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<sup>1</sup> Dr. LaGarry's flawed analysis is also demonstrated by Mr. Demuth testimony where he shows that Dr. LaGarry's definition of "artesian conditions" does not comport with the typical industry definition. *See* Powertech Exhibit APP-074 at 6-7, ¶ A.8.

<sup>2</sup> Powertech's answering testimony also provides an extensive discussion of Messrs. Lichnovsky's and Demuth's analysis of Dr. LaGarry's comments regarding borehole plugging methods. *See id.* at 10-11, ¶¶ A.14-16b.

6, ¶ A.6b. This portion of Powertech’s answering testimony demonstrates that the Tribe’s supplemental testimony has no merit with respect to boreholes at the Dewey-Burdock ISR Project site and the issue of adequate confinement.

With respect to allegations levied by Dr. LaGarry regarding the presence of faults and/or sinkholes at the Dewey-Burdock ISR Project site, Mr. Lichnovsky provides a discussion of the flaws in Dr. LaGarry’s analyses in Paragraphs A.17-25. Specifically, Mr. Lichnovsky addresses the hand-drawn sketch on the back of the DS178 lithology log (Tribe Exhibit OST-033).

Regarding the Tribe’s allegation that this hand-drawn sketch depicts a sinkhole, Mr. Lichnovsky states:

“The hand-drawn sketch appears to depict a *domal feature* cut by two faults with down throw away from each other, leaving a structurally high “horst” structure. No such feature has been observed at the Dewey-Burdock Project...*If it were meant to depict a sinkhole, the hash marks would be inside rather than around the outside of the circular shape.*”

*Id.* at 12, ¶¶ A.17-18 (emphasis added).

With respect to whether this lithology log represents a fault or domal feature at or near the DS178 borehole location, Mr. Lichnovsky states:

“The lithology log for DS178 is provided as Exhibit APP-076. It shows that this hole is in the vicinity of the historical Darrow mine pits. *No such “horst” structure has been observed in this vicinity or anywhere else in the license area.* DS178 was drilled to a shallow depth of 110 feet, which would have drilled through a portion of the Fall River and may not have even penetrated the Fuson Shale. In the vicinity of the historical mine pits, Powertech has committed to not conducting uranium ISR in the Fall River (refer to TR RAI P&R-2 response, Ex. APP-016-B at 28).”

*Id.* at 12, ¶ A.19 (emphasis added).

Mr. Lichnovsky also notes multiple instances where Dr. LaGarry or one of his assistants mistook the word “offset” as indicating a potential fault, when it merely referred to horizontal

distance between two boreholes. For example, Mr. Lichnovsky notes the following regarding the DS392 lithology log:

“This appears to be a case of Dr. LaGarry or one of his assistants mistaking the word “offset” as applying to vertical offset (as would be the case if there were a fault) rather than horizontal offset, which is simply describing the distance from DS392 to nearby holes. The full text of the highlighted note on the DS392 lithology log submitted as Ex. OST-034 makes this clear (emphasis added):

Note: DS392 is an *offset* of DS388 which shows a thin high grade stringer at 68’-70’ of ½’-30-68R. Special samples were taken of the interval 70’-78’ DS392 for further study. An *offset* was flagged 30’ E. of DS392.”

*Id.* at 12-13, ¶ A.20 (emphasis added).

The same conclusion holds true for the IHM32 lithology log (Tribe Exhibit OST-036).

Powertech Exhibit APP-074 at 14, ¶ A.22.

Mr. Lichnovsky describes how he performed a field investigation and subsurface evaluation of the IHK2, IHM61, TRR17 and TRT16 borehole locations (Tribe Exhibits OST-035, OST-037, OST-038 and OST-039) and determined that there is not any evidence of faulting in these areas. Regarding the IHK2 borehole field investigation, Mr. Lichnovsky made the following conclusion:

“There is no evidence of a fault at this location, but after investigating the IHK2 borehole location in the field, there is a logical explanation for why the field geologist might have thought there was a fault when he completed the lithology log in 1968....

Within this area is a sandstone outcrop that has been removed by erosion to the northeast. This sandstone is underlain by one of the marine shales in the Fall River Formation. I believe the field geologist who made the remark on the IHK2 lithology log mistakenly thought this was part of the Skull Creek Shale and that it was dropped down by a fault.”<sup>3</sup>

*Id.* at 13, ¶ A.21.

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<sup>3</sup> Mr. Lichnovsky similarly concludes that there is no evidence of faulting at the IHM61, TRR17, and TRT16 borehole locations. *See id.* at 15-16, ¶¶ A.23-24.

Accompanying Mr. Lichnovsky's answering testimony are eight detailed geologic cross sections cut through four of the boreholes allegedly showing faults (IHK2, IHM61, TRR17 and TRT16). *See* Powertech Exhibits APP-078 through APP-085. Mr. Lichnovsky concludes from his analysis of these cross sections that "[t]hese cross sections show the continuity and vertical consistency of the Fuson Shale and do not indicate the presence of faults that could potentially impact Powertech's ability to contain fluid migration." *See, e.g.*, Powertech Exhibit APP-074 at 16, ¶ A.24.

Regarding Dr. LaGarry's allegation that the TRJ111 geophysical log contains "deliberate masking (redaction) of borehole log data," Mr. Lichnovsky demonstrates that this is based on an incomplete review of the data by Dr. LaGarry:

"This is a simple case of an issue with document reproduction. The log Dr. LaGarry submitted as evidence in Ex. OST-041 is a photocopy of the original geophysical log. The black square visible on the photocopy is simply the drift survey that was taped to the original log. The drift surveys were printed on thermal paper that, when copied, reflects the light back causing them to appear black.

What Dr. LaGarry or his assistant apparently failed to notice is that right behind this photocopy in Powertech's files is the original geophysical log showing the drift survey. This is provided as Ex. APP-086. This shows the drift survey that was taped to the log. To clearly illustrate that there was not "deliberate masking (redaction) of borehole log data," Ex. APP-087 depicts the same log with the taped drift survey removed. It reveals that there is nothing behind the drift survey."

*Id.* at 17, ¶ A.27.

As shown above and in the entirety of Powertech's answering testimony, Dr. LaGarry's analysis regarding the presence of sinkholes or faults at borehole locations identified in the Tribe's submitted exhibits is rife with a lack of specificity, misinterpretations and inaccuracies and cannot rise to a level that suggests modification of the ROD or Powertech's license is necessary.

Finally, with respect to the Tribe's statements that it does not believe that Dr. LaGarry's supplemental testimony or the disclosed borehole log data warrants protection from publication, Powertech argues that such borehole log data satisfy the Commission's Rules of Practice at 10 CFR § 2.390(a)(4) as confidential business information. As stated previously at the evidentiary hearing in Powertech's affidavit accompanying its August 26, 2014, response to the Tribe's motion for mandatory disclosures and in Powertech's September 11, 2014, Motion to amend the protective order, these borehole log data were purchased as a result of significant company financial expenditure and are data that are typically maintained as confidential for financial purposes. The borehole log data possessed and disclosed by Powertech, either from its own exploratory drilling or historical data in Powertech's possession prior to license application submission or acquired more recently from Energy Fuels Resources (EFR), was costly to obtain and has significant financial value that would be of great importance to any company attempting to develop the Dewey Burdock ISR Project. The Tribe makes no attempt to refute the potential confidentiality of these data in its Motion other than to say they do not concede that they are confidential and that Dr. LaGarry's testimony addresses "inadequacies and omissions in NRC Staff and Powertech analyses and conclusions that are based on borehole logs and information Powertech provided in its application and which are already included in the hearing record." Tribe Motion at 2. The Tribe does not attempt to justify its statements using the Commission's Rules of Practice and does not attempt to refute previous offerings by Powertech on the confidential nature of these data. Indeed, the Tribe and CI acquiesced to the execution of a protective order for these data and did not oppose Powertech's September 11, 2014, motion to amend the protective order. Without more of a showing, the Licensing Board should continue to classify these data as confidential. In light of the statements offered by the Tribe, Powertech is

submitting an appropriate 10 CFR § 2.390(a)(4) affidavit demonstrating that Powertech Exhibits APP-074 through APP-076 and APP-078 through APP-087 are confidential business information subject to the amended September 12, 2014, protective order.

**III. CONCLUSION**

For the reasons discussed above and based on the entirety of Powertech's submitted answering testimony, Powertech respectfully requests that the Licensing Board find that the Tribe's supplemental testimony and exhibits do not warrant modification of the ROD and do not require supplementation of the SER or the FSEIS.

Respectfully submitted,

**/Signed (electronically) by/ Christopher S. Pugsley**

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Dated: December 4, 2014

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_____	)	

**CERTIFICATE OF SERVICE**

I hereby certify that copies of the foregoing **“POWERTECH (USA), INC. RESPONSE TO OGLALA SIOUX TRIBE’S NOVEMBER 21, 2014 MOTION TO ADMIT ADDITIONAL TESTIMONY AND EXHIBITS”** in the above-captioned proceeding have been served via the Electronic Information Exchange (EIE) this 4th day of December 2014, which to the best of my knowledge resulted in transmittal of the foregoing to those on the EIE Service List for the above captioned proceeding.

Respectfully Submitted,

**/Executed (electronically) by and in  
accord with 10 C.F.R. § 2.304(d)/  
Christopher S. Pugsley, Esq.**

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Dated: December 4, 2014