

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
CROW BUTTE RESOURCES, INC. ,) Docket No. 40-8943
) ASLBP No. 08-867-02-OLA-BD01
(License Renewal for the)
In Situ Leach Facility, Crawford, Nebraska) November 23, 2015

**OGLALA SIOUX TRIBE AND CONSOLIDATED INTERVENORS JOINT
FILING OF PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW**

APPLICABLE LEGAL STANDARDS

In order to obtain a source materials license from the NRC, an applicant must file a license application under AEA Section 182. 42 USC 2232. Each application shall be in writing and “shall specifically state such information as the Commission, by rule or regulation, may determine to be necessary to decide such of the technical and financial qualifications of the applicant, the character of the applicant, the citizenship of the applicant, or any other qualifications of the applicant as the Commission may deem appropriate for the license. *Id.*

NRC Regulations Section 40.41 provides, in pertinent part, that:

§ 40.41 Terms and conditions of licenses.

(a) Each license issued pursuant to the regulations in this part shall be subject to all the provisions of the act, now or hereafter in effect, and to all rules, regulations and orders of the Commission.

(c) Each person licensed by the Commission pursuant to the regulations in this part shall confine his possession and use of source or byproduct material to the locations and purposes authorized in the license. Except as otherwise provided in the license, a license issued pursuant to the regulations in this part shall carry with it the right to receive, possess, and use source or byproduct material.

(e) The Commission may incorporate in any license at the time of issuance, or

thereafter, by appropriate rule, regulation or order, such additional requirements and conditions with respect to the licensee's receipt, possession, use, and transfer of source or byproduct material as it deems appropriate or necessary in order to:

- (1) Promote the common defense and security;
- (2) Protect health or to minimize danger of life or property;
- (3) Protect restricted data;
- (4) Require such reports and the keeping of such records, and to provide for such inspections of activities under the license as may be necessary or appropriate to effectuate the purposes of the act and regulations thereunder.

As the United States Supreme Court has explained when examining the statute, in a NEPA document, the government must disclose and take a “hard look” at the foreseeable environmental consequences of its decision. *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21, 96 S. Ct. 2718, 2730 n.21 (1976); *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416 (1971).

In characterizing the type of analysis that constitutes a “hard look,” NEPA prohibits reliance upon conclusions or assumptions that are not supported by scientific or objective data. *Citizens Against Toxic Sprays, Inc. v. Bergeland*, 428 F.Supp. 908 (1977). “Unsubstantiated determinations or claims lacking in specificity can be fatal for an [environmental study] Such documents must not only reflect the agency’s thoughtful and probing reflection of the possible impacts associated with the proposed project, but also provide the reviewing court with the necessary factual specificity to conduct its review.” *Committee to Preserve Boomer Lake Park v. Dept. of Transportation*, 4 F.3d 1543, 1553 (10th Cir. 1993).

NEPA’s implementing regulations require agencies to:

[I]nsure the professional integrity, including scientific integrity of the discussions and analysis in environmental impact statements. [Agencies] shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement.

40 C.F.R. § 1502.24 (Methodology and Scientific Accuracy). Further, where data is not

presented in the NEPA document, the agency must justify not requiring that data to be obtained.
40 C.F.R. § 1502.22.

Federal circuit courts have held:

NEPA ensures that a federal agency makes informed, carefully calculated decisions when acting in such a way as to affect the environment and also enables dissemination of relevant information to external audiences potentially affected by the agency's decision. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). ... NEPA documentation notifies the public and relevant government officials of the proposed action and its environmental consequences and informs the public that the acting agency has considered those consequences

Catron County Board of Commissioners v. U.S. Fish and Wildlife Service, 75 F.3d 1429, 1437 (10th Cir. 1996).

In order to meet these requirements “an agency must set forth a reasoned explanation for its decision and cannot simply assert that its decision will have an insignificant effect on the environment.” *Marble Mountain Audubon Society v. Rice*, 914 F.2d 179, 182 (9th Cir. 1990), *citing Jones v. Gordon*, 792 F.2d 821 (9th Cir. 1986). “An agency cannot avoid its statutory responsibilities under NEPA merely by asserting that an activity it wishes to pursue will have an insignificant effect on the environment. The agency must supply a convincing statement of reasons why potential effects are insignificant.” *Public Service Co. of Colorado v. Andrus*, 825 F.Supp. 1483, 1496 (D. Idaho 1993) *citing The Steamboaters v. FERC*, 759 F.2d 1383, 1393 (9th Cir. 1985) (internal quotes and citations omitted).

A federal agency may not simply claim that it lacks sufficient information to assess the impacts of its actions. The courts are very clear with respect to an agency's statements in a NEPA document that “[a] conclusory statement unsupported by empirical or experimental data, scientific authorities, or explanatory information of any kind not only fails to crystallize the issues, but affords no basis for a comparison of the problems involved with the proposed project

and the difficulties involved in the alternatives.” *Seattle Audubon Society v. Moseley*, 798 F. Supp. 1473, 1479 (W.D. Wash. 1992), *aff’d* 998 F.2d (9th Cir. 1993).

DISCUSSION

Contention A: There is no evidence based science for [the NRC Staff’s] conclusion that ISL mining has “no non radiological health impacts,” or that non radiological impacts for possible excursions or spills are “small.”

Findings of Fact

The Applicant does not currently test for organic forms of metals, including uranium, and is not required to do so. HT 1938.

Reduced water quality or lowered water levels in domestic and agricultural wells can cause economic hardship to regional water users and present potential hazards to livestock. HT 1687, 1689-90.

Diminished spring flow and wetland habitat loss can result from lowering of the potentiometric surface. HT 1766.

The high levels of Lead-210 in English Creek and Squaw Creek, referred to in the EA, remain unexplained. NRC-010 at 83-84.

Conclusions of Law

ISL mining has demonstrable non-radiological health impacts.

Contention C: [The NRC Staff's] characterization that the impact of surface waters from an accident is "minimal since there are no nearby surface water features," does not accurately address the potential for environmental harm to the White River.

Findings of Fact

NRC Staff asserts that, "we don't see a detrimental effects to wetland or stream recharge" HT p 1403 and that, "we knew there would not be any impact to surface water" HT p 1407.

The NRC staff has presented no data to support these conclusions, neither in the EA, the SER nor the LRA.

The water resource monitoring program is not designed to collect data to assess impacts to surface waters including seeps, springs and wetlands.

Mine units 6 and 8 include headwaters of English Creek and there are seeps / springs in upper English Creek and a high water table HT p. 1626-1629.

The significant flow in English Creek, visibly present in August 2015, indicates base flow from groundwater discharge. There is nothing in the record to indicate whether the high water table in the vicinity of English Creek and Mine Units 6 & 8 is the result of discharge from the Brule or the Basal Chadron/Chamberlain Pass Formation.

Numerous excursion events in Mine Units 6 and 8 have been attributed to precipitation events by the Applicant, a conclusion unchallenged by NRC Staff, despite lack of sufficient evidence to allow analysis or rule out other potential causes HT 1618-19, 2484-85. A plausible conclusion is that some vertical communication between the Basal Chadron/Chamberlain Pass Formation and the Brule aquifer is occurring in the vicinity of English Creek near Mine Units 6 & 8.

There are PWS springs for Crawford. These springs and seeps may represent groundwater discharge, yet the water source of these discharge features is unknown due to a lack of sampling.

This uncertainty contributes to a general lack of understanding of groundwater flow in the Basal Chadron/Chamberlain Pass Formation, the Brule aquifer and the alluvial aquifer along the White River.

The NRC Staff maintains that the pre-operational potentiometric surface of the Basal Chadron/Chamberlain Pass Formation was above ground level (NRC-009 at 61¹), indicating the potential for discharge from the Basal Chadron/Chamberlain Pass Formation to the Brule aquifer, the White River alluvium and streams that cross the license area. Lowering of this potentiometric surface reduces the volume of discharge that in turn results in reduced flow in streams, springs and seeps.

Discharge to the White River alluvium is likely where the Basal Chadron/Chamberlain Pass Formation sub-crops under the alluvium a few miles northwest of Crawford HT pp 1076, 1081.

There is nothing in the record to indicate that the Applicant or the NRC Staff has analyzed this discharge area or other known or suspected discharge areas. An analysis of this discharge area would allow calculations to determine the flow rate in the Basal Chadron/Chamberlain Pass Formation and the time it would take for water to move from the mining area to this discharge area.

¹ All citations are to the page number in the PDF document listed on the parties' exhibit lists, not to the number on the document itself.

Based on the identified potential discharge to springs, seeps, streams and alluvium that can contribute water to the White River, the White River is the most likely pathway for contaminants from mining activities at CBR to move off-site and potentially reach the Pine Ridge Reservation. HT 1225.

NRC does not require testing of the White River itself, so no informed conclusions can be drawn regarding contamination events by NRC Staff.

Conclusions of Law

The uncertainty and lack of understanding regarding groundwater flow in the mining area and its relation to surface waters precludes NRC staff from making an informed assessment of the impacts of accidents, including excursions, to surface water features at the CBR site.

The lack of analysis regarding the seeps, springs and streams in the mining area and the vicinity precludes NRC Staff from concluding that mining activity has not had an impact on these surface water features. The very poor quality of pre-mining water level and water quality data greatly constrain the ability to determine changes to pre-mining conditions.

Contention D (merged with EA Contention 3 & 10): [The NRC Staff] incorrectly states there is no communication among the aquifers, when in fact, the Basal Chadron aquifer, where mining occurs, and the aquifer, which provides drinking water to the Pine Ridge Indian Reservation, communicate with each other, resulting in the possibility of contamination of the potable water. Based on this potential communication between the aquifers, the EA's environmental justice analysis, including analysis of cumulative effects, should be expanded to consider potential impacts on the aquifer which provides drinking water to the Pine Ridge Indian Reservation.

Findings of Fact

Vertical communication between the Basal Chadron/Chamberlain Pass Formation and the Brule aquifer requires two conditions: potential and pathways. The pre-operational

potentiometric surface in the Basal Chadron/Chamberlain Pass Formation above the ground surface described in NRC-009 at 61 demonstrates potential.

Dr. LaGarry, an expert for the Consolidated Intervenors and the Oglala Sioux Tribe testified that, “It is broadly recognized by the State of Nebraska and the geological community working in Nebraska that the Brule Formation is an aquifer where it has a lot of joints and faults, a feature called ‘secondary porosity.’” HT 1044

Dr. LaGarry stated that, “Everywhere that those rocks (the Brule Formation) occur on the land surface, they are full of joints and fractures and ancient mineralizations.” HT 1102.

Dr. LaGarry further testified that faults and joints entirely surround the license area. HT 1471-72.

The map drawn up for the Wyoming Fuels Company, the predecessor to CBR, identifies numerous faults in the license area that have neither been explained nor refuted by the Applicant of NRC Staff. INT-044 & INT-045.

While describing the “self-healing” clay that comprises the upper confining unit, Mr. Beins, testifying for the Applicant, confirmed that the clay was entirely saturated. HT 1101-02, 1104, 1134-45. The fact that this clay is saturated does not mean that it will not transmit water vertically across its thickness. The rate at which this vertical communication occurs has not been established.

NRC Staff relies on hypothetical “self-healing” properties of the clay in the upper confining unit to explain the lack of hydraulic connectivity that would otherwise be expected in a region with so many faults and fractures. HT 1132-35.

Dr. LaGarry testified that the premised “self-healing” properties of the clay were not apparent in his experience. HT 1131.

NRC Staff refers to “multiple lines of evidence” that show there is no intercommunication between the aquifers to deduce that the “self-healing” clay must be responsible. HT 1132.

Mr. Beins and Mr. Lewis, testifying for the Applicant, indicated that the aquifer pump tests were the only hydraulic tests performed in the field by the Applicant. HT 1145-47.

In Pump Test One, deviation and apparent vertical leakage is observed and noted by NRC Staff, but no raw data on the test is disclosed by the Applicant, and only Theis-type curve matches are presented. BRD-002A & HT 2510-12, 2521.

In the text for Pump Test One, other curve and straight line matching techniques were said to be carried out, but that information is not disclosed. BRD-002A.

There follows a “Two-Stage Theis Nonequilibrium Analysis” lacking reference to peer-reviewed journal publications, texts, or American Society for Testing and Materials Standards. BRD-002A.

A modified Hantush curve match analysis was referenced in the text for Pump Test One, but the “match” and its deviation is not presented. BRD-002A.

The modified Hantush analysis contains restrictive *a priori* assumptions that all vertical leakage is only from an overlying clay unit. These assumptions are not supported by the presented Theis curve match. INT-079 at 5-6.

The only explanation given by the Applicant, and accepted by NRC Staff, for the observable deviation from expected values in the text of Pumping Test One is the notion that the increased flow might be due to a vertical enlargement (greater aquifer thickness) in the aquifer radially outward from the pumping well. BRD-002A.

The Consolidated Intervenors point out that for this explanation to be plausible, increased vertical aquifer thickness would have to be larger in all directions from the pumping well. The

information presented on aquifer thickness changes does not support such a conclusion, meaning this “explanation” is demonstrably lacking and erroneous. INT-079 at 5 & HT 2533-34.

Evidence of vertical leakage in Pump Test One is acknowledged by the Applicant and by NRC Staff, but not explained. HT at 2522.

In the written description of Pump Test Two, deviations from type-curves/straight line analyses are not only unexplained, they are unrecognized.

BRD-002B, Figure 2.7-14 on Page 2.7(40) clearly shows a recharge boundary and drawdown deviating at about 30 minutes into the test. There is no explanation given in the text for this deviation.

In testimony the Applicant explained this deviation by proposing to ignore all early data from the test. Witnesses for the Applicant stated that all values before a certain time should be ignored because they do not fit a “u” value criteria. HT 2536-37. Further analysis, utilizing Applicant’s own reference (CBR-081 Kruseman & de Ridder at p. 65, also NRC-110), shows that the early data the Applicant chose to ignore has greater than 98% acceptability. HT 2538-39.

The Applicant proposed a second rationale for ignoring the early data based on well dewatering effects. HT 2539-40. Simple calculation of the well bore dewatered (πr^2 times the dewatered length divided by the pumping rate) shows that the early data that was unrecognized, or ignored, by Applicant and NRC Staff is, in fact, acceptable data that is unexplained.

Like all the previous tests, Pump Test Three shows inadequate monitoring well design and spacing, as noted by the Consolidated Intervenors, including only one well in the Brule, and violation of the basic assumptions of the analytical approach. HT 2552-53. Assumptions on

which the analytical approaches depend, (including layer cake geology, constant aquifer thickness, and, homogeneity and isotropy of aquifer materials), are directly refuted by the field data showing variable aquifer thicknesses, directional anisotropy reported in the pumping test texts, and other discrepancies noted by the Consolidated Intervenors. INT-079 & HT 25.

Pump Test Four shows deviation from expected values in Cooper Jacob straight line plots. Petrotek's analysis of the 2002 aquifer testing submitted by Applicant is insufficient, in that only the first 1,700 minutes of a 3,780 minute drawdown test were presented. HT 1301-03. Later data where deviation is clearly evident are ignored.

This deviation is noted by NRC Staff in testimony and is explained only by speculation that it is caused by nearby wells turning on and off. HT 1304-05, 1309. Such pumping activity would call into question the validity of Pump Test Four. No data related to nearby well pumping schedules is disclosed to support this speculative explanation or allow outside review.

The Applicant does not include, nor does NRC Staff require, any quantitative calculations or correlation analysis to support the premise that the Pump Test Four deviations are caused by interferences from outside pumping wells. HT 1308-10.

For Pump Tests Five through Nine the Applicant simply ignored the results and did not present data. INT-079 at 11-12. The Applicant alluded to the fact that deviation did occur, but did not explain and support the probable cause of the deviation of fitted curves from measured drawdown for each test. INT-079 at 11-12. The Applicant provides unsupported conjecture, accepted by NRC Staff, about the causes for the unexpected results, results that were not quantitatively revealed.

Pumping test ten is far afield from the area of interest for this license application, and not all data pertinent to this test was disclosed or available for review.

There is insufficient Pump Test data to conclusively establish lack of hydraulic connectivity.

The structure and characteristics of the White River Feature (initially called the “White River Fault” by the Applicant) are not understood and any conclusions drawn by NRC Staff are unsupported by evidence in the record.

NRC Staff has now rejected the modeling that it relied on to define the structure of the White River Feature. HT 2588.

Whether the White River Feature is actually a fault or a fold, it undoubtedly contains some fractured rocks that can have high permeabilities. HT 2605.

In addition to being unable to characterize the structure of the White River Feature, NRC Staff is unable to determine the effect the feature has on groundwater flow in the Basal Chadron/Chamberlain Pass Formation, including the effect on the potentiometric surface.

The steepening of the hydraulic gradient in the Brule close to the operating mine units that is described in the SER on page 23 (NRC-009 at 40) is not thoroughly understood nor analyzed in sufficient detail to rule out any causes, including those related to mining activity in the Basal Chadron/Chamberlain Pass Fm. HT 2463-64.

The available data points indicate the potential for leakage between the Brule and Basal Chadron/Chamberlain Pass Fm. HT 2463-64.

Numerous excursion events in Mine Units 6 and 8 have been attributed to precipitation events by the Applicant, a conclusion unchallenged by NRC Staff, despite lack of sufficient evidence to allow analysis or rule out other potential causes HT 1618-19, 2484-85. A plausible conclusion is that some vertical communication is occurring in the vicinity of English Creek near Mine Units 6 & 8.

The Oglala Sioux Tribe and its people, virtually all Native American and impoverished, lie within the 50 mile environmental impact radius from the Crow Butte facility. EA, pp. 42, 89-92; Figure 3-3; Tables 4-5, 4-6, 4-7; INT-032 (Statement of Dennis Yellow Thunder), p. 2; INT-021 (Statement of Debra White Plume); HT, 1512.

The interests of a number of tribes, and specifically the special historic, cultural, and spiritual relationship of the Lakota people and the Oglala Sioux Tribe to the area where the Crow Butte activities are unique to these tribes in general and in particular to the Oglala Lakota, distinct from the interests of the non-EJ population, and are therefore subject to the required full and proper Environmental Justice analysis.

The TCP surveys discussed in regards to required consultations are an important part of the information gathering required for the EJ analysis.

The failure of the consultation process also constitutes a failure of the EJ analysis as it is lacking of crucial information necessary to make the analysis. The analysis of EJ interests cannot be made unless the NRC Staff determines what exactly those interests are.

The EA discusses the significant historic and cultural ties of the Tribe and its people to the Crow Butte area, but then omits them entirely from the tables and the discussions analyzing the data pertaining to minority and poverty. EA, pp. 42, 89-92; Figure 3-3; Tables 4-5, 4-6, 4-7.

The EA dismisses and systemically omits Tribal and indigenous interests from the body of the EA. Outside of the discussion of the history of the indigenous use of the Crow Butte area and the historic and cultural interests, the sovereign treaty-secured territory of the Tribe is persistently referred to as "Shannon County," South Dakota, as if the Tribe was not a sovereign indigenous nation. EA, 43, 92. The EA's "Site Description" while mentioning other claimants of title fails to mention the Tribe's interest in the lands including their claims of title. EA, 4;

compare EA, 56-57. The EA's description of the "Affected Environment" mentions the non-Indian agricultural uses of the area but fails to mention the treaty, historic, cultural, and spiritual interests of the Tribe and its people in the area that are also part of the environment affected by Crow Butte's activities. The "Land Use" table, Table 3-1 includes virtually all uses of the lands including recreational, *but* the historic, cultural, and spiritual uses of the area by the Tribe and its people and other indigenous people. EA, 18. Likewise, the discussion of the uses of the area includes recreational, agricultural, residential, commercial, industrial and mining, and even "habitat" for fish and wildlife, but again wholly omits any mention of the use of the land by the Tribe and its people and other indigenous peoples. EA, 19-20.

Contaminants from the Crow Butte facility may move along the course of the White River and into the domestic water resources on the Pine Ridge Indian Reservation. INT 003 (Statement of Dr. Hannah LaGarry), pp. 3-4; INT-013 (Supplemental Statement of Dr. Hannah LaGarry, pp. 3, 6); OST-001 (Statement of Charmaine White Face); INT-021 (Statement of Debra White Plume); HT, 1173-74, 1219-21, 1224-25, 1480-89, 1820-21 (LaGarry), 1490-1504, 1674-75 (White Face).

Additional investigation is required to determine whether and the course of contaminant movement from the Crow Butte facility to the Pine Ridge Indian Reservation. HT, 1178-79, 1674-75. The data utilized by CBR and the NRC Staff was outdated. HT, 1074, 1122-1124, 1226-27, 1488, 1647-49.

The discussion in the EA of the use of surface and groundwater resources wholly omits the treaty interests of the Tribe and its people to the waters on and under the lands in question and wholly omits the uses of those waters by the Oglala Sioux Tribe and its people as downstream from the Crow Butte facility. EA, 32-41.

The EA at page 43, in its discussion of Socioeconomic impacts, describes the Native American residents of “Shannon County, South Dakota” in one paragraph as within the radius of impact consideration but then wholly omits them from the remainder of the socioeconomic impact discussion and analysis, including omission from the discussions on income and economy, housing and public infrastructure, and education resources. EA, 41-46. In Part 4 of the EA on “Environmental Impacts” the impacts on the Oglala Sioux Tribe and its people in regards to the land, water, soil, natural resources, are again never mentioned. EA, 64-85. Nor are their interests mentioned in the parts on Ecological or Cumulative or Scenic or Health Impacts, EA, 92-120, 125-128.

The Tribe and its people are mentioned by the NRC Staff in the EA in only those parts referring to historic and cultural interests. EA, 52-57, 86-88, 120-124. There, the EA fails to discuss in any detail the spiritual ties of the Lakota and other indigenous peoples to the Crow Butte area, including their spiritual obligation as care-takers of those lands, nor their customs and traditions that are impacted by the activities of Crow Butte on their treaty lands. There is no discussion of the impact the forced deprivation of those lands has had on the Lakota people.

The entire Environmental Justice discussion, at EA pages 89-92 and 124-125, of the interests of the Oglala Sioux Tribe and its people – “Shannon County’s population” - is in one, short, paragraph and one sentence. EA, 92, 125. There, the NRC Staff inferred that it would have completed a more in-depth analysis of the environmental justice impacts if it had included the 96% minority population living at Pine Ridge Indian Reservation as being affected. But because it only looked at the 4-mile area near Crawford, NE, which is only 4.4% minority, it found no need to conduct the more detailed environmental justice analysis.

The NRC Staff failed to conduct the more detailed environmental justice analysis, to take the “hard look” required by NEPA.

Conclusions of Law

NRC Staff’s reliance on the hypothetical “self-healing” clays to demonstrate lack of connectivity is without evidentiary support and amounts to conjecture.

NUREG 1569 p2-24 provides:

The applicant should describe all hydraulic parameters used to determine expected operational and restoration performance. Aquifer and aquitard hydraulic properties may be determined using aquifer pumping tests for parameters such as hydraulic conductivity, transmissivity, and specific storage. Any of a number of commonly used aquifer pumping tests may be used including single-well drawdown and recovery tests, drawdown versus time in a single observation well, and drawdown versus distance pumping tests using multiple observation wells. The methods or standards used to methods of analysis include use of curve fitting techniques for drawdown or recovery curves that are referenced to peer-reviewed journal publications, texts, or American Society for Testing and Materials Standards. It is important for the reviewer to ensure that where fitted curves deviate from measured drawdown, the applicant explains the probable cause of the deviation (e.g., leaky aquitards, delayed yield effects, boundary effects, etc.).

The NRC has not ensured supportable explanations of the probable cause of deviation where fitted curves deviate from measured drawdown in pumping tests at Crow Butte.

The explanation given by the Applicant for the observable deviation and apparent vertical leakage in Pump Test 1 is not supported quantitatively by the Applicant and is not plausible.

NRC Staff’s reliance on this explanation contravenes the mandate in NUREG 1569.

The early data from Pump Test 2 that the Applicant chose to ignore, and NRC Staff did not

challenge, is actually acceptable data. This early data from Pump Test 2, that demonstrates the existence of a recharge boundary, is not explained as required by NUREG 1569.

The Applicant did not disclose any data or analysis from Pump Tests Five through Nine. There is no opportunity for external review of these tests, and this lack of presentation of data directly conflicts with the requirements of NUREG 1569.

There is no actual understanding of the nature of the White River Feature, let alone enough evidence in the record to support a FONSI.

The NRC has committed to undertake environmental justice reviews. *Dominion Nuclear North Anna, LLC*, CLI-07-27, 66 NRC 215, 237-38 (2007).

As part of that commitment, the Commission issued a Policy Statement in 2004, setting out its position on the treatment of environmental justice issues in the agency's licensing and regulatory activities. The Policy Statement re-stated and expanded upon the "environmental justice" doctrines then emerging from a handful of the NRC's adjudicatory decisions and also from two Staff guidance documents. Although the Policy Statement charged the Staff with diligently investigating potential adverse environmental impacts on minorities and low-income populations, it directed the Staff to conduct an even more detailed examination in situations where the Staff finds that "the percentage in the impacted area exceeds that of the State or the County percentage for either the minority or low-income population." Under those circumstances, the Commission charged the Staff to consider environmental justice "in greater detail." As explained below, the Board has suggested that we clarify the meaning of the quoted phrase and determine whether the Staff's FEIS satisfied our "greater detail" standard in this proceeding.

Id., at 238 (citations omitted).

"Environmental justice, as applied at the NRC, ...means that the agency will make an effort under NEPA to become aware of the demographic and economic circumstances of local communities where nuclear facilities are to be sited, and take care to mitigate or avoid special impacts attributable to the special character of the community." *Private Fuel Storage, LLC*, CLI-02-20, 56 NRC 147, 156 (2002).

“Disparate impact” analysis is the NRC’s principal tool for advancing environmental justice under NEPA. The NRC’s goal is to identify and adequately weigh, or mitigate, effects on low-income and minority communities that become apparent only by considering factors peculiar to those communities.” *La. Energy Servs., L.P.*, CLI-98-3, 47 NRC 77, 100 (1998).

This detailed environmental justice examination is mandated by NEPA to fulfill its purposes. “NEPA has twin aims. First, it places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action. Second, it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decision-making process. ... Congress did not enact NEPA, of course, so that an agency would contemplate the environmental impact of an action as an abstract exercise. Rather, Congress intended that the ‘hard look’ be incorporated as part of the agency’s process of deciding whether to pursue a particular federal action.” *Baltimore Gas and Elec. Co. v. N.R.D.C., Inc.*, 462 U.S. 87, 97,100 (1983) (citations omitted). “NEPA promotes its sweeping commitment to prevent or eliminate damage to the environment and biosphere by focusing Government and public attention on the environmental effects of proposed agency action. By so focusing agency attention, NEPA ensures that the agency will not act on incomplete information, only to regret its decision after it is too late to correct.” *Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 371 (1989).

NEPA also requires that the environmental impact statement include as a component of the “hard look,” among other information, a “detailed” statement of “any adverse environmental effects which cannot be avoided should the proposal be implemented.” 42 U.S.C. §4332(2)(C)(ii). The Supreme Court in *Robertson v. Methow Valley Citizens Council*, 490 U.S.

332, 351 (1989), construed this provision to require “a detailed discussion of possible mitigation measures.” “[O]ne important ingredient of an EIS is the discussion of steps that can be taken to mitigate adverse environmental consequences. ...[O]mission of a reasonably complete discussion of possible mitigation measures would undermine the ‘action-forcing’ function of NEPA.” *Robertson*, 490 U.S. at 351-52; *see also*, *South Fork Band Council of Western Shoshone of Nev. V. U.S. Dept. of Int.*, 588 F.3d 718, 727 (9th Cir. 2009); *Limerick Ecology Action, Inc. v. U.S. N.R.C.*, 869 F.2d 719 (3rd Cir. 1989); *Calvert Cliffs 3 Nuclear Project, LLC*, LBP-09-4, 69 NRC 170, 228-29 (2009).

The implementing NRC regulation listing the information that must be included in the ER, 10 C.F.R. § 51.45(b)(2), restates this NEPA mandate. NRC regulation 10 C.F.R. §51.103(a)(4) also requires the Commission to state in the record of decision whether it “has taken all practicable measures within its jurisdiction to avoid or minimize environmental harm from the alternative selected, and if not, to explain why those measures were not adopted. Summarize any license conditions and monitoring programs adopted in connection with mitigation measures.”

A detailed discussion of mitigation measures cannot be had without the gathering of the information necessary for that discussion. That information includes, “the population distribution in the vicinity of the site affects the magnitude and location of potential consequences from radiation releases.” 48 Fed.Reg. at 16,020.

In regards to mitigating environmental justice issues here, that requires a full examination of all of the impacted EJ communities and institutions within the 50-mile radius of Crow Butte facility.

This failure of the NRC Staff to conduct the more detailed environmental justice analysis, to take a “hard look,” is a violation of NEPA.

NEPA requires that all of the relevant information necessary for an agency to demonstrate compliance with NEPA be included in an environmental impact statement, and not in additional documents outside of the public comment and review procedures applicable to that environmental impact statement. See, *Massachusetts v. Watt*, 716 F.2d 946, 951 (1st Cir. 1983) (“[U]nless a document has been publicly circulated and available for public comment, it does not satisfy NEPA’s EIS requirements.”); *Village of False Pass v. Watt*, 565 F. Supp. 1123, 1141 (D. Alaska 1983), *aff’d sub nom Village of False Pass v. Clark*, 735 F.2d 605 (9th Cir. 1984) (“The adequacy of the environmental impact statement itself is to be judged solely by the information contained in that document. Documents not incorporated in the environmental impact statement by reference or contained in a supplemental environmental impact statement cannot be used to bolster an inadequate discussion in the environmental impact statement.”); *Dubois v. U.S. Dept. of Agriculture*, 102F.3d1273, 1287 (1st Cir. 1996), *cert. denied sub nom. Loon Mountain Recreation Corp. v. Dubois*, 117S. Ct.2510 (1997)(“Even the existence of supportive studies and memoranda contained in the administrative record but not incorporated in the EIS cannot ‘bring into compliance with NEPA an EIS that by itself is inadequate.’ . . . Because of the importance of NEPA’s procedural and informational aspects, if the agency fails to properly circulate the required issues for review by interested parties, then the EIS is insufficient even if the agency’s actual decision was informed and well-reasoned.”) (*citations omitted*); *Grazing Fields Farm v. Goldschmidt*, 626 F.2d 1068, 1072 (1st Cir.1980) (even the existence of supportive studies and memoranda contained in the administrative record but not incorporated in the EIS cannot “bring

into compliance with NEPA an EIS that by itself is inadequate.”).

Because the EJ information, discussion, and analysis are all incomplete, the only remedy is the remand of the issue back to the NRC Staff for the required detailed examination, discussion, and analysis, including a detailed discussion and evaluation of specific mitigation measures and the recirculation of the EA. *La. Energy Servs., L.P.*, 47 NRC at 110.

Contention F: Failure to include recent research.

Findings of Fact

The Chamberlain Pass Formation, formerly known as the Basal Chadron or Chadron A, had a much longer, more varied, more chemically reactive history than it was previously assumed to have when it was called the Chadron A. HT p 1059.

The Chamberlain Pass Formation and Chadron Formations are known to have “entirely different chemistries, entirely different hydrologies and entirely different geological histories.” HT p 2471.

The Consolidated Intervenors and Oglala Sioux Tribe pointed out that the difference between the terms Chamberlain Pass Formation and Basal Chadron Formation is not simply semantic, the Chamberlain Pass Formation refers to “a separate depositional environment, a separate episode of earth history, different volcanoes, different environments, different time [and] different distribution.” HT p 1055.

Dr. LaGarry testified that, “The name was changed because the rocks were demonstrably mischaracterized when they were called the Basal Chadron.” HT p 1054-55.

Conclusions of Law

The ore body being mined at the CBR site is located in the Chamberlain Pass Formation.

Neither the Applicant, nor NRC Staff, demonstrate the due diligence required to make accurate, informed analysis of the ore bearing strata.

The distinction between Basal Chadron and Chamberlain Pass Formation is a material distinction based on demonstrable differences in the types of rock, chemical environments and the conclusions that flow therefrom.

EA CONTENTION 1A: Failure to Meet Applicable Legal Requirements Regarding Historical, Cultural, and Spiritual Resources.

Findings of Fact

The site of the Crow Butte License Renewal area lies within the ancestral lands of the Oglala Lakota peoples and the Oglala Sioux Tribe and Nation. INT-032, p. 2; Hearing Transcript (“HT”), pp. 984-85.

The site of the Crow Butte License Renewal area is within the territory and lands reserved from succession by the Oglala Sioux Tribe and Nation under the Ft. Laramie Treaties of 1851 and 1868 with the United States of America. Article V of the Fort Laramie Treaty of September 17, 1851, 11 Stat. 749, and Article XVI of the Fort Laramie Treaty of 1868, 15 Stat. 635. Environmental Assessment (“EA”), 3.9.4; INT-031, ¶ 13; INT-032, p. 2.

The Oglala Lakota peoples and the Oglala Sioux Tribe and Nation have never relinquished their title to nor their authority and jurisdiction over the territory and lands reserved under the Ft. Laramie Treaties of 1851 and 1868 with the United States of America, including the site of the Crow Butte License Renewal area. INT-031, ¶ 13; INT-032, ¶ 10. *See, e.g.*,

*Hearing Before the Select Committee on Indian Affairs, United States Senate, 99TH Cong., 2d Sess., S. 1453 (Sioux Nation Black Hills Act) <http://www.gpo.gov/fdsys/pkg/CHRG-99shrg63488/pdf/CHRG-99shrg63488.pdf>; *Oglala Sioux Tribe of the Pine Ridge Indian Reservation v. U.S. Army Corps. of Eng'rs*, 570 F.3d 327 (D.C. Cir. 2009); Lazarus, Edward. Black Hills/White Justice: The Sioux Nation versus the United States, 1775 to the Present (1991).*

The site of the Crow Butte License Renewal area contains water resources, including natural ponds, springs, and creeks, that were utilized by the Lakota peoples and the Oglala Sioux Tribe and Nation since time immemorial and contains prehistoric camp sites and related historic and cultural resources. EA, 3,5.1, 3.9.8; INT-031, ¶s 14, 15; INT-054; CBR-LR-000767, Attachment 14, Figure 1; HT, 1526-27, 2070.

The site of the Crow Butte License Renewal area was traditionally utilized by the extended family of Lakota Chief Crazy Horse and other Lakota. INT-032, ¶ 11.

The site of the Crow Butte license renewal area contains plants and herbs used by the Lakota people in the practice of their traditional medicine and for spiritual purposes. EA, 3.9.8; INT-032, ¶ 12; HT, 2080.

Crow Butte, near the site of the Crow Butte license renewal area, is an important spiritual location used by the Lakota peoples for vision quests and other spiritual purposes. EA, 3.9.8; INT-031, ¶ 15; INT-032, ¶ 12; HT, 1003.

The Lakota people have been excluded from the Crow Butte license renewal and surrounding area and thereby prevented from utilizing these areas for their traditional medicine and spiritual purposes. HT, 1003.

No specific survey was performed for this license renewal in order to demonstrate that archaeological sites within the project area are properly identified, evaluated and protected and to show that it has submitted a proper analytic discussion under 10 C.F.R. §§ 51.45 and 51.60.

The Final EA relies on cultural resources surveys that are from 1982 and 1987, which are 33 years and 28 years old, respectively. Final EA, Section 3.9.6; CBR-027 & CBR-028 (Bozell).

The 1982 and 1987 surveys are too old to use to ensure that there are no currently ascertainable cultural resources.

12 of the 18 sites listed in the Bozell study as potentially needing protection, including a potential burial site, were excluded without explanation from the historic resources project resources map in or near the Crow Butte license renewal area and that require further investigation. EA, Section 3.9.6; HT, 997-998, 1000-03.

Adequate subsurface testing for possible historic or cultural resources or properties was not conducted within or near the Crow Butte license renewal area. INT-031, ¶s 25, 26; HT, 1004-07.

The name and credentials of the person supervising the “class III” survey have not been provided as necessary to indicate that it is a valid ‘class III’ survey. Without such information, it is not possible for Tribe, Consolidated Intervenors, or the public to evaluate the nature and extent of the TCP (“traditional cultural property”) surveys that have been performed. INT 022 (Letter statement of Dr. Louis A. Redmond); NRC-054.

A proper survey for traditional cultural properties must involve the Tribal elders of the Lakota people and their extended families and extended site visits by them. This was not done in regards to the Crow Butte license renewal. HT, 1009, 2023, 2244, 2274-81, 2307-08, 2336-37.

Conclusions of Law

Last, “for contentions based on NEPA, such as the one at issue here, the burden shifts to the Staff, because the NRC, not the applicant, bears the ultimate burden of establishing compliance with NEPA.” *In re Calvert Cliffs 3 Nuclear Project, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), LBP-12-17, 76 N.R.C. 71, 80 (2012); *In re Pac. Gas & Elec. Co.*, 67 N.R.C. 1, 13 (N.R.C. Jan. 15, 2008)(“There is no genuine dispute that NEPA and AEA legal requirements are not the same [. . .] and NEPA requirements must be satisfied.”).

Under the National Historic Preservation Act (“NHPA”), a federal agency must make a reasonable and good faith effort to identify historic properties, 36 C.F.R. § 800.4(b); determine whether identified properties are eligible for listing on the National Register based on criteria in 36 C.F.R. § 60.4; assess the effects of the undertaking on any eligible historic properties found, 36 C.F.R. §§ 800.4(c), 800.5, 800.9(a); determine whether the effect will be adverse, 36 C.F.R. §§ 800.5(c), 800.9(b); and avoid or mitigate any adverse effects, 36 C.F.R. §§ 800.8[c], 800.9(c). The [federal agency] must confer with the State Historic Preservation Officer (“SHPO”) and seek the approval of the Advisory Council on Historic Preservation (“Council”). *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 805 (9th Cir. 1999). See also 36 CFR § 800.8(c)(1)(v)(agency must “[d]evelop in consultation with identified consulting parties alternatives and proposed measures that might avoid, minimize or mitigate any adverse effects of the undertaking on historic properties and describe them in the [NEPA document].”)

NRC Staff interpretations of these requirements are not entitled to deference. The 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. See *National Center for Preservation Law v. Landrieu*, 496 F. Supp. 716, 742 (D.S.C.), *aff'd per curiam*, 635 F.2d 324 (4th Cir. 1980). The ACHP's regulations "govern the implementation of Section 106," not only for the Council itself, but for all other federal agencies. Id. See *National Trust for Historic Preservation v. U.S. Army Corps of Eng'rs*, 552 F. Supp. 784, 790-91 (S.D. Ohio 1982).

NHPA § 106 ("Section 106") requires federal agencies, prior to approving any "undertaking," such as this project, to "take into account the effect of the undertaking on any district, site, building, structure or object that is included in or eligible for inclusion in the National Register." 16 U.S.C. § 470(f). Section 106 applies to properties already listed in the National Register, as well as those properties that may be eligible for listing. See *Pueblo of Sandia v. United States*, 50 F.3d 856, 859 (10th Cir. 1995). Section 106 provides a mechanism by which governmental agencies may play an important role in "preserving, restoring, and maintaining the historic and cultural foundations of the nation." 16 U.S.C. § 470.

10 C.F.R. § 51.71(d) and NEPA require that the Final EA include an analysis of all environmental impacts of a proposed action, including cultural impacts. 10 C.F.R. § 51.70(a) places an affirmative duty on NRC Staff to conduct all NEPA analysis in conjunction with other surveys or studies required under federal law. This includes necessary surveys required under NEPA and the NHPA.

As a result, the Final EA fails to comply with 10 C.F.R. § 51.60 because its analyses are not adequate, accurate and complete in all material respects concerning archaeological sites and materials within the project area.

The Final EA fails to meet the requirements of the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4231, *et seq.*, the National Historic Preservation Act (NHPA), 16 U.S.C. §470, *et seq.*, and implementing regulations, including NRC regulations in 40 C.F.R. Part 51, specifically including 10 CFR §51.45, §51.10, §51.70, and §51.71, because the Final EA does not provide analyses that are adequate, accurate, and complete in all material respects to either (i) describe the affected area and environment; or (ii) demonstrate that cultural and historic resources within the project area are identified and protected pursuant to Section 106 of the NHPA.

EA CONTENTION 1B: Failure to Involve or Consult the Oglala Sioux Tribe as Required by Federal Law

Findings of Fact

The Oglala Sioux Tribe is a sovereign indigenous nation and body politic comprised of approximately 41,000 citizens with a territory of over 4,700 square miles in the southwestern portion of South Dakota. The Tribe also claims the territory and lands within the 1851 and 1868 Ft. Laramie treaties. INT-031, ¶ 8; HT, 2295, 2297.

The United States of America recognizes a nation-to-nation relationship with the Oglala Sioux Tribe. INT-031, ¶ 8; Presidential Executive Memorandum entitled “Government-to-Government Relations with Native American Tribal Governments” (April 29, 1994), 59 Fed. Reg. 22951.

Free, prior, informed, consent is required by the Oglala Sioux Tribe to the renewal of the activities at the Crow Butte site. INT-031, ¶ 16; HT, 2027.

The Oglala Sioux Tribe has not given its free consent to the issuance of license renewal or the activities of Crow Butte at the site.

The Environmental Assessment fails to discuss the NRC’s obligations pertaining to the collective human rights of the Oglala Sioux Tribe and the Lakota peoples in the issuance of the license renewal to Crow Butte.

Nowhere in the Environmental Assessment is it demonstrated that the Oglala Sioux Tribe and its people have been adequately “informed” of how the relicensing of the Crow Butte activities for several more decades may affect them.

The NRC Staff waited more than 3 years to begin the tribal consultation process in regards to the Crow Butte license renewal application. HT, 2019-20.

The 'consultation' process was one involving a single large collective meeting involving the NRC, several tribes and representatives of more than one uranium company (Crow Butte and Powertech-Dewey Burdock) in June 2011. EA, Section 3.9.7.; INT-031, ¶ 18; INT-053; NRC-050. The tribal consultation process developed by the NRC Staff and the Applicant through its private contractor, the SRI Foundation, was combined for three pending license application, the Crow Butte renewal, the North Trend expansion, and the Dewey-Burdock project. *See*, EA, 54-56; Exs. INT-052 (May 12, 2011 letter), INT-053 (June 8, 2011 Meeting Transcript), INT-031 (Declaration of CatchesEnemy); INT-033. The exact same process was applied for each site, often simultaneously. *Id.*; see also, INT-035; HT, 2259-60, 2264-68, 2274-81.

There was never a meeting with the Oglala Sioux Tribe solely devoted to the Crow Butte renewal or the cultural resources that are within the existing Crow Butte licensed area. EA, Section 3.9.7; HT, 2041-42, 2179.

On April 30, 2015, in *Powertech USA, Inc. (Dewey-Burdock In Situ Uranium Facility)*, LBP-15-16, Dkt. No. 40-9075-MLA, ASLB No. 10-898-02-MLA-BD11 (ML15120A299), following an evidentiary hearing that included a challenge to the nearly identical if not more involved consultation process employed by the NRC Staff (see pp. 25-31), the NRC Board found and concluded that consultation process to be inadequate as follows:

The FEIS has not adequately addressed the environmental effects of the Dewey-Burdock project on Native American culture, religious and historic resources, and the required meaningful government-to-government consultation between the Oglala Sioux Tribe and the NRC Staff has not taken place. Because of these facts, procedures must be put in place to assure that the required NEPA hard look is taken, the NRC's Part 51 environmental regulations are satisfied, and an opportunity for meaningful consultation is provided.

...Meaningful consultation between the NRC Staff and the Oglala Sioux Tribe may still be undertaken to identify and mitigate any potential harm to Sioux cultural, historical or religious sites We therefore conclude that additional consultation between the NRC Staff and the Oglala Sioux Tribe is necessary. This additional consultation is required in order to 1) to satisfy the hard look at impacts required by NEPA and to supplement the FSEIS, if necessary, and 2) to satisfy the consultation requirements of the NHPA.

The NRC Staff can remedy this deficiency in the Record of Decision in this proceeding by promptly initiating a government-to-government consultation with the Oglala Sioux Tribe to identify any adverse effects to cultural, historic or religious sites of significance to the Oglala Sioux Tribe that may be impacted by the Powertech Dewey-Burdock project. This would then allow the adoption of mitigation measures, as necessary. The FEIS and Record of Decision in this case must be supplemented, if necessary, to include any cultural, historic or religious sites identified and to discuss any mitigation measures to avoid any adverse effects.

Finally, given our conclusion that the inadequate discussion of potential impacts to Sioux cultural, historical or religious sites in the FEIS or Record of Decision is a significant deficiency in the NRC Staff's NEPA review, this Board could require immediate suspension of the issued materials license.

Id. at 42-44; INT 027, pp. 803-05.

In *Powertech USA, Inc. (Dewey-Burdock In Situ Uranium Facility)*, LBP-15-16, Dkt. No. 40-9075-MLA, ASLB No. 10-898-02-MLA-BD11 (ML15120A299), the Board noted that “the NRC Staff/tribal consultation process broke down, and the vast majority of the consulting tribal parties, including the Oglala Sioux Tribe, did not participate in the field survey opportunity provided by the NRC Staff and Powertech. The consulting parties could agree on neither the scope, techniques, or timing of the field surveys, nor alternatives to a field survey to address Native American cultural religious and historic concerns.” *Id.* at 40-41. The Board noted and found:

The NRC Staff is at least partly at fault for the failed consultation process. For the past five years the Oglala Sioux Tribe has raised its concerns with the consultation process, and yet the NRC Staff has not held a single consultation session, on a government-to-government basis, solely with members of the Oglala Sioux Tribe. Instead, the NRC Staff has held three face-to-face sessions with multiple tribes concerning multiple ISL projects in both South Dakota and Nebraska. The three meetings cited by the NRC Staff as government-to-government consultations were large group meetings, with members of many diverse tribes, all with varying degrees of attachment to the Black Hills area of South Dakota. Though numerous letters were sent to the Oglala Sioux Tribe, as detailed above, quantity does not necessarily equate with meaningful or reasonable consultation and “doesn’t in itself show the NHPA-required consultation occurred.”

Id.

Specifically in regards to the Oglala Sioux Tribe, the Board remarked: “The Oglala Sioux Tribe has shown it has the most direct historical, cultural and religious ties to the area. The Oglala Sioux Tribe’s Pine Ridge reservation is located within 30 miles of the Crow Butte license renewal site. HT, 2294. The Oglala Sioux Tribe is both a consulting party and an Intervenor in this proceeding. It is entitled to a meaningful, face-to-face, government-to-government consultation session with the NRC Staff regarding this specific project.” *Id.*; HT, 1007-08.

These findings and this ruling of the *Powertech* Board are equally applicable here. The underlying facts, and NRC Staff failures, regarding the deficiencies in the consultation process employed by the NRC Staff are identical to that found in the Crow Butte license renewal. INT-032, ¶¶ 14-17; INT-039.

The NRC Staff failed to carry out its agency responsibilities in a manner that recognizes and respects the nation-to-nation, government-to-government, relationship with the Oglala Sioux Tribe and all other interested Tribes. INT-032, ¶ 5; HT, 2011-17.

The Oglala Sioux Tribe was never involved in the surveys that were being conducted with regard to Crow Butte Marsland Expansion Area and Two Crows Expansion Area, nor the 1982 or 1987 surveys on which the Final EA relies. EA, Sections 3.9.7 and 3.9.8.

Not all interested tribes were ‘meaningfully’ consulted, including the Oglala Sioux Tribe. EA, Sections 3.9.7 and 3.9.8; INT-022 (Dr. Redmond), p. 2; INT-039; HT-2032, 2035-36; 2039-40, 2041-42.

The tribes both individual and collaboratively, including the Oglala Sioux Tribe, have from the beginning have been objecting to the delegation of the federal government’s responsibilities to CBR’s private contractor, the SRI Foundation, in regards to the assessment of historic and cultural properties at the Crow Butte sites. They have been demanding instead that the process proceed according to a nation-to-nation, government-to-government relationship, and that the tribes collaboratively be in control of the design and execution of the TCP surveys. *See*, Exs. INT-031, ¶s 19-22, 24; INT-032; INT-053 (June 8, 2011 Meeting Transcript), pp. 77-87, 102-103, 107, 113-114, 165-166, 190-191); INT-033 (pp. 24, 27, 28, 29-30); INT-034; INT-037; INT -039; INT-040; INT-041; HT, 2083, 2101-16, 2120-21, 2124-25, 2133, 2137-46, 2172-73, 2176-77, 2180, 2218-21, 2243-45, 2249-50, 2255-59, 2351-52, 2355-56.

The NRC Staff refused to accept, or fund, the TCP survey design protocol proposed by the tribes as to their own cultural resources and the consultation process collapsed. *Id.*; also, INT 038 (withdrawal from participation), INT-027 (excerpt of August 19, 2014 Dewey-Burdock Hearing Transcript regarding funding costs of tribal TCPs); HT, 2101-16.

Despite having years to do so, neither Crow Butte nor the NRC Staff have provided the Tribe, or those of Consolidated Intervenors who are members of the Tribe, a meaningful opportunity to be involved in the assessment or determination of the significance of the identified

sites, nor a meaningful opportunity to identify additional sites that may warrant evaluation or listing.

Conclusions of Law

The Oglala Lakota peoples and the Oglala Sioux Tribe and Nation hold title to the lands containing the site of the Crow Butte license renewal area. Article V of the Fort Laramie Treaty of September 17, 1851, 11 Stat. 749, and Article XVI of the Fort Laramie Treaty of 1868, 15 Stat. 635.

The Oglala Lakota peoples and the Oglala Sioux Tribe and Nation possess exclusive jurisdiction and authority over the territory and lands reserved under the Ft. Laramie Treaties of 1851 and 1868, including the site of the Crow Butte license renewal area. Article V of the Fort Laramie Treaty of September 17, 1851, 11 Stat. 749, and Article XVI of the Fort Laramie Treaty of 1868, 15 Stat. 635; *see also, e.g., Hearing Before the Select Committee on Indian Affairs, United States Senate, 99TH Cong., 2d Sess., S. 1453 (Sioux Nation Black Hills Act)* <http://www.gpo.gov/fdsys/pkg/CHRG-99shrg63488/pdf/CHRG-99shrg63488.pdf>; *Oglala Sioux Tribe of the Pine Ridge Indian Reservation v. U.S. Army Corps. of Eng'rs*, 570 F.3d 327 (D.C. Cir. 2009); Lazarus, Edward. Black Hills/White Justice: The Sioux Nation versus the United States, 1775 to the Present (1991); *also*, Article 26, Section 1 of the UN DRIP executed by the United States provides that: "Indigenous peoples have a right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired." Article 26, Section 2 provides: "Indigenous peoples have the right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired." Article 26,

Section 3 further provides: “States *shall* give legal recognition and protection to these lands, territories and resources. Such recognition shall be conducted with due respect to the customs, traditions and land tenure systems of the indigenous peoples concerned.” (emphasis added).

Dann v. United States, Case 11.140, Report No. 75/02, Doc. 5. 1 at 860 (2002), ¶¶ 171 and 172.

The United States is a signatory state of the UN Declaration of the Rights of Indigenous Peoples (2007) (“UN DRIP”).

The UN DRIP provides guidance in determining the meaning and scope of “consultations” with indigenous peoples, including the Oglala Lakota through the Tribe.

Article 19 of the UN DRIP provides: “States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them.” See also, INT-032, ¶ 13.

ILO Convention 169 (1989) is customary international law and as such is binding upon the United States of America in its relations with indigenous peoples.

ILO Convention 169 (1989), art. 6, sec. 2, requires in regards to consultations with indigenous peoples: “The consultations carried out in application of this Convention shall be undertaken, in good faith and in a form appropriate to the circumstances, with the objective of achieving agreement or consent to the proposed measures.”

ILO Convention 169, art. 7., secs. 1, 3, and 4 require: “In addition, they shall participate in the formulation, implementation and evaluation of plans and programmes for national and regional development which may affect them directly. ... Governments shall ensure that, whenever appropriate, studies are carried out, in co-operation with the peoples concerned, to

assess the social, spiritual, cultural and environmental impact on them of planned development activities. The results of these studies shall be considered as fundamental criteria for the implementation of these activities. ...Governments shall take measures, in co-operation with the peoples concerned, to protect and preserve the environment of the territories they inhabit.”

Section 106 of the National Historic Preservation Act requires that if an undertaking is the type that “may affect” an eligible site, the agency must make a reasonable and good faith effort to seek information from consulting parties, other members of the public, and Native American tribes to identify historic properties in the area of potential effect. *See* 36 CFR § 800.4(d)(2). *See also, Pueblo of Sandia*, 50 F.3d at 859-863 (agency failed to make reasonable and good faith effort to identify historic properties).

The NHPA requires that federal agencies consult with any “Indian tribe ... that attaches religious and cultural significance” to the sites. 16 U.S.C. § 470(a)(d)(6)(B). Consultation must provide the tribe “a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking’s effects on such properties, and participate in the resolution of adverse effects.” 36 C.F.R. § 800.2(c)(2)(ii).

The NHPA requires that “[t]he agency official shall ensure that the section 106 process is initiated early in the undertaking’s planning, so that a broad range of alternatives may be considered during the planning process for the undertaking.” 36 CFR § 800.1(c).

The ACHP has published guidance specifically on this point, reiterating in multiple places that consultation must begin at the earliest possible time in an agency’s consideration of

an undertaking, even framing such early engagement with the Tribe as an issue of respect for tribal sovereignty. ACHP, Consultation with Indian Tribes in the Section 106 Review Process: A Handbook (November 2008), at 3, 7, 12, and 29; NRC-048.

Regarding respect for tribal sovereignty, the NHPA requires that consultation with Indian tribes “recognize the government-to-government relationship between the Federal Government and Indian tribes.” 36 CFR § 800.2(c)(2)(ii)(C). *See also*, Presidential Executive Memorandum entitled “Government-to-Government Relations with Native American Tribal Governments” (April 29, 1994), 59 Fed. Reg. 22951, and Presidential Executive Order 13007, “Indian Sacred Sites” (May 24, 1996), 61 Fed. Reg. 26771; NRC-046; NRC-047.

Any Federal Government action is subject to the United States’ assumed fiduciary responsibilities toward the Indian tribes. INT-031, ¶ 10; *United States v. Jicarilla Apache Nation*, 131 S.Ct. 2313, 2324-25 (2011).

EA Contention 6: The Final EA violates the National Environmental Policy Act in concluding that the short-term impacts from consumptive ground water use during aquifer restoration are MODERATE.

Findings of Fact

In its calculations regarding consumptive groundwater use during restoration, NRC Staff accepted Applicant’s model-based pore volume estimate despite it being less than 1/3 of the pore volumes actually used in the mine units restored or nearing the end of restoration. HT 1775.

NRC Staff indicated that there is no limit to the number of pore volumes that Applicant could use in restoring the various mine units. HT 1775-76.

Ground water transfer will not be used as a component of the restoration program for the

remaining mine units. HT 1778-79.

No actual water balance is included in the record.

Conclusions of Law

There is insufficient evidence in the record to support assumptions made by NRC Staff regarding the volume of water likely to be required during aquifer restoration.

There is no data presented to allow independent analysis and verification of the volume of water use contemplated in the EA.

The very limited and poor quality of pre-mining water level data precludes the ability to make an informed decision about likely impacts from consumptive ground water use during restoration.

EA Contention 9: The Final EA violates 10 C.F.R. §§ 51.10, 51.70 and 51.71, and the National Environmental Policy Act and implementing regulations by failing to include the required discussion of ground water restoration mitigation measures.

Findings of Fact

The LRA and EA describe the first step of the restoration process as “ground water transfer” though that step will not be available during actual restoration. HT 1778-79.

No information is presented that describes the presumptions in the Model Based Restoration Plan that projected only 4-6 pore volumes to restore the remaining mine units.

Based on the MBRP, the Applicant is likely to request ACLs earlier than with previous mine unit restorations. HT 1883-84.

Conclusions of Law

The EA does not describe or analyze the actual steps likely to be taken in aquifer restoration at the CBR facility, instead it substitutes a generic discussion of basic restoration procedures.

EA Contention 12: The Final EA omits a discussion of the impact of tornadoes on the license renewal area, and inadequately discusses the potential impacts from land application of ISL mining wastewater.

Findings of Fact

NRC Staff did not include a discussion of tornado impacts on the license renewal area because it asserted that no mitigative practices for tornadoes exist, despite contrary message in NRC017. HT 1954, 1962.

In its discussion of PM10 data, NRC Staff essentially cut and pasted a typo mixing Badlands National Park with the Black Hills from the LRA into the EA. HT 1958-60.

NRC Staff accepted, without analysis or review, the tornado probability submitted by Applicant in the LRA. HT 1977-80.

Despite calculations demonstrating that the probability of a tornado at the CBR facility is two orders of magnitude higher than the minimum threshold for analysis under NUREG 1520, NRC Staff maintains that tornado impact analysis is not required in the EA. HT 2002-03.

NRC Staff would not change the EA, even after learning that the tornado probability calculation it accepted without challenge was demonstrably incorrect. HT 2003-04.

Conclusions of Law

NRC Staff's lack of analysis of tornado impacts fails to satisfy the "hard look" required by NEPA.

NRC Staff's demonstrated uncritical acceptance of data, including typos, from Applicant does not amount to a "thoughtful or probing reflection of the possible impacts associated with the proposed project." *Committee to Preserve Boomer Lake Park v. Dept. of Transportation*, 4 F.3d 1543, 1553 (10th Cir. 1993).

EA Contention 14: The Final EA violates the National Environmental Policy Act in its failure to provide an analysis of the impacts on the project from earthquakes; especially as it concerns secondary porosity and adequate confinement. These failings violate 10 C.F.R. §§ 51.10, 51.70 and 51.71, and the National Environmental Policy Act, and implementing regulations.

Findings of Fact

Dr. LaGarry, testifying for the Consolidated Interveners and the Oglala Sioux Tribe, highlighted evidence in the record indicating that the flow pattern of Chadron Creek was altered when it disappeared into a fracture in a rock that may have been the result of seismic activity in the region. HT 1666.

Dr. LaGarry indicated that one method to monitor the impacts of seismic activity in the vicinity of the CBR facility is to map the lineaments visible within the license area and to check for any changes after the occurrence of an earthquake. HT 1667-68.

Earthquakes located only a short distance (25 miles) from the CBR facility, but across the South Dakota state line were not evaluated in the EA. HT 1657.

NRC Staff testified that earthquakes in Wyoming and South Dakota were considered, but there is no evidential support in the record. HT 1661.

Conclusions of Law

The EA does not consider the potential impacts of earthquakes on secondary porosity, permeability and aquifer confinement.

RULING

There is not enough evidence in the record, nor sufficient analysis and synthesis of the available information to support a FONSI. Lingering questions remain about the nature of groundwater levels and flow directions in the both the mining aquifer and the overlying Brule aquifer. The potential for vertical communication between the aquifers has not been conclusively ruled out by the evidence presented in the record.

There is not enough evidence in the record to characterize the White River Feature, nor to assess its potential effects.

NRC Staff accepted explanations for Pump Test deviations that do not comply with the standards in NUREG 1569.

NRC Staff cut and pasted the Applicant's assessment of tornado impact danger from the LRA without conducting independent analysis and verification.

NRC Staff accepted pre-operational baseline data that is insufficient to assess whether mining has had an impact on the water levels in the Brule aquifer and surface water including springs, seeps, streams and wetlands.

The lack of evidence in the record supporting an accurate understanding of the pre-mining conditions at the CBR site precludes making the informed impact assessments that could support a FONSI.

The EA fails to meet the requirements of the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4231, *et seq.*, the National Historic Preservation Act (NHPA), 16 U.S.C. § 470, *et seq.*, and implementing regulations, including NRC regulations in 40 C.F.R. Part 51, specifically including 10 CFR §51.45, §51.10, §51.70, and §51.71, because the Final EA does not provide analyses that are adequate, accurate, and complete in all material respects to either (i)

describe the affected area and environment; or (ii) demonstrate that cultural and historic resources within the project area are identified and protected pursuant to Section 106 of the NHPA

The dearth of accurate baseline information at ISL mining sites, as is the case here, is one of the factors that spurred the EPA to propose its 192 Subpart F regulations. The CBR mine could not have been licensed under this new protocol with the information presented in the record.

The only way to address this lack of scientific rigor at licensing is to require an Environmental Impact Statement that specifically addresses the conditions established in the record.

The EIS must include an assessment of regional conditions, specifically including the Town of Crawford, NE, sufficient to determine whether, and in what ways, the mining activities are affecting local groundwater quality and levels, and what, if any, impacts from either mining activities to surface water, or surface water to mining activities may be occurring.

In addition to the EIS, the Board orders the following license conditions be added:

1. Monitoring of the White River and the contributing alluvium downstream from the CBR facility.
2. Monitoring of the water level in the Brule aquifer in Crawford, NE.
3. Analysis and monitoring of the likely discharge area from the Chamberlain Pass Formation northwest of Crawford.
4. Identification of the ground water sources of the seeps, springs, wetlands and streams in the license area and as far as Crawford, NE.
5. Conclusive determination, through direct observation, of the properties of the White River

Feature.

6. Mapping of any lineaments in the license area and correlation with known faults or fractures.
7. Analysis and evaluation of tornado impact mitigation measures including underground storage of yellow cake and chemical binders capable of solidifying contaminants in the evaporation ponds.
8. Additional testing to demonstrate aquifer confinement, or lack thereof, including slug tests and using transducers.
9. Conclusive determination, through direct monitoring, of the hydraulic gradient in the Brule aquifer.
10. Uranium must be added as a testing parameter for all excursion monitoring wells.

In proposing the Subpart F regulations, the E.P.A. sent an unambiguous message that not enough was being done to protect water resources subjected to ISL mining. Enumerated in the list of reasons for taking this action, the E.P.A. highlighted the need for a more “rigorous approach” to determining baseline conditions. What passed scientific muster when CBR was initially licensed lacks the rigor and accuracy available today, and required tomorrow by the new EPA regulations.

This Board recommends to the Commission that, upon the EPA’s publication of the final 192 Subpart F, it require, under its Section 51.20 powers, an EIS at all currently licensed and operating ISL facilities to assess actual conditions at each site and to address compliance with the new 192 Subpart F regulations.

Dated this 23rd day of November, 2015.

Respectfully submitted,

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In the Matter of)
)
CROW BUTTE RESOURCES, INC. ,) Docket No. 40-8943
) ASLBP No. 08-867-02-OLA-BD01
(License Renewal for the)
In Situ Leach Facility, Crawford, Nebraska) November 23, 2015

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing ‘**OGLALA SIOUX TRIBE AND CONSOLIDATED INTERVENORS JOINT FILING OF PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW**’, in the captioned proceeding were served via email on the 23rd day of November 2015, which to the best of my knowledge resulted in transmittal of same to those on the EIE Service List for the captioned proceeding.

Respectfully submitted,

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