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Docket: NRC-2012-0281

License Amendment to Construct and Operate Marsland Expansion Area

Comment On: NRC-2012-0281-0005

Crow Butte Resources, Inc.; Marsland Expansion Area; Draft Environmental Assessment and Finding of No Significant Impact; Notice of Availability and Request for Comment

Document: NRC-2012-0281-DRAFT-0010

Comment on FR Doc # 2017-26934

Submitter Information

Name: David Frankel

General Comment

Attached is a comment letter from Aligning for Responsible Mining, and Western Nebraska Resources Council.

Attachments

Docket ID NRC-2012-0281 EA Comments 01292018 pdf

January 29, 2018

May Ma
Office of Administration, Mail Stop: OWFN-2- A13
U.S. Nuclear Regulatory Commission
Washington, DC 20555- 0001

Re: **Docket ID NRC-2012- 0281**
Crow Butte Resources, Inc. - Marsland Expansion Area

Dear Sir or Madam:

Please accept these comments regarding the above referenced docket ID on behalf of:

Aligning for Responsible Mining
Western Nebraska Resources Council

Failure to Take “Hard Look” at Hydrogeological Data and Modeling

3.3.2.3 Basal Chadron Sandstone Aquifer--Uranium-Bearing Aquifer

In Section 3.3.2.3 (at p 3-47), NRC Staff accepts, without commentary, that CBR relied on drawdown and recovery data collected during the pump test to estimate hydrogeological properties of the ore bearing aquifer using the Theis and Cooper Jacob method, even identifying the latter as “Jacob’s Straight-Line Distance-Drawdown method.”

Inherent in the appropriate application of these models is the understanding that when the interpretational assumptions are not violated, the data on the semi-logarithmic graphs should be straight lines. Simple visual inspection of the graphs produced by CBR during Pump Test 8 demonstrates that this is not the case, yet the EA makes no mention of this inconsistency with the modeling assumptions, nor is there any indication that NRC Staff even considered alternative interpretations of the data. Several graphs show results normally associated with either a recharge boundary or the beginning of a delayed yield effect, indicative of an aquifer that is not fully confined, yet the EA neither identifies, nor considers these serious implications.

The EA also accepts, without comment, the mean values for transmissivity and storativity provided by CBR as a result of Pump Test 8. The values for transmissivity ranged more than an order of magnitude from 230 ft²/day to 2,469 ft²/day, while the storativity values ranged all the way from 1.7x10⁻³ to 8.32x10⁻⁵. Despite these dramatic variations, the EA accepts, without identification, the assumptions underpinning CBR’s analysis of the Pump Test data, namely that the aquifer is homogeneous and isotropic over the test area.

Nor does the EA mention anything about the barometric response in the observation wells encountered by CBR during Pump Test 8. The manner in which a well/aquifer system responds to changes in atmospheric pressure is variable and directly related to the degree of aquifer confinement. If the aquifer in the test area is in communication with the atmosphere then it is not confined and is likely susceptible to vertical movement of fluids into or out of the unit. Rasmussen and Crawford (1997) provide a method for using barometric response data as a diagnostic model to identify the degree of confinement in an aquifer. No discussion, let alone modeling is presented in the EA.

The EA's statement at 3.2.2.2 (at p 3-30), and repeated at 3.3.2.3 (at p 3-47) that, "CBR would also perform additional pump test to provide coverage to demonstrate the natural confinement of the Basal Chadron Sandstone aquifer in the southern portion of the MEA," belies NRC Staff's responsibility to take a "hard look" at environmental impacts before a decision is made.

This information necessitates a more detailed review and requires that any feasible pump tests or other analysis be performed as part of the NEPA process, with necessary opportunities for public and agency review and comment, in order to assess the potential impacts of the project.

As with the other fundamental gaps in meaningful data, this lack of baseline data collection as part of the NEPA process severely undermines the public's (and the agencies') ability to understand and evaluate the potential impacts of the operation. Indeed, it appears throughout the EA that any time there is a question about the impacts, instead of requiring collection of the data necessary to do a proper analysis, NRC simply allow the company to defer collection of any data to a later (post-NEPA) time – then claim that "no evidence" exists to demonstrate serious impacts would occur. This is backward. The burden is on the applicant in an NRC proceeding to demonstrate the ability to protect the environment and the public health and on NRC to comply with NEPA.

Citing to a lack of evidence when it is due to a lack of any meaningful investigation, is not allowable.

Failure to Require or Provide Necessary Baseline Data

Throughout the EA, NRC proposes to allow Crow Butte to defer collection of critical data that is admittedly necessary to conduct a review of the project and the resulting impacts.

According to the EA, substantial information related to baseline conditions at the site, and needed to assess the impacts of the proposed operations, is not proposed to even be collected or reviewed until long after the NEPA process has concluded. This scheme is not allowable under NEPA.

Under NEPA, an agency is required to “describe the environment of the areas to be affected or created by the alternatives under consideration.” 40 C.F.R. § 1502.15. The establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process:

NEPA clearly requires that consideration of environmental impacts of proposed projects take place before [a final decision] is made.” *LaFlamme v. FERC*, 842 F.2d 1063, 1071 (9th Cir.1988) (emphasis in original). Once a project begins, the “pre-project environment” becomes a thing of the past, thereby making evaluation of the project’s effect on pre-project resources impossible. *Id.* Without establishing the baseline conditions which exist in the vicinity ... before [the project] begins, there is simply no way to determine what effect the proposed [project] will have on the environment and, consequently, no way to comply with NEPA. *Half Moon Bay Fisherman’s Mark’t Ass’n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988). “In analyzing the affected environment, NEPA requires the agency to set forth the baseline conditions.” *Western Watersheds Project v. BLM*, 552 F.Supp.2d 1113, 1126 (D. Nev. 2008) (emphasis added). “The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process.” *Council of Environmental Quality, Considering Cumulative Effects under the National Environmental Policy Act* (May 11, 1999).

In this case, the EA has not demonstrated that a baseline has been adequately established.

Examples:

From EA page 3-50:

And finally, CBR would conduct additional aquifer pumping tests that would be designed to identify hydraulic boundaries (CBR, 2015, Section 2.6.1.3) including those caused by faulting.

4.2.2 Impacts to Soils

CBR would use the results of the flood and erosion studies to support current and future planning of the project design and layout. For example, CBR would use the results of these studies to identify areas that may require special design features or measures to reduce impacts (e.g., berms around areas of mine units, strategically located drainage channels, culverts on roadways).

Using the results of erosion and flood analyses, CBR would construct facilities outside of flood-prone boundaries in order to avoid potential impacts to facilities from flooding and potential impacts to major ephemeral drainages and the Niobrara River in the event of any potential spills or leaks.

For example, CBR would be required to develop a pollution control strategy for preventing the discharge of pollutants through the use of storm water diversion, containment structures, roof coverings, preventive maintenance, good housekeeping, pollutant source minimization, spill prevention practices, site inspections, and maintaining current documentation.

4.3.2.1 Groundwater Quantity

CBR would confirm the model projections during ISR operation to ensure that the Basal Chadron Sandstone aquifer remained saturated, and if necessary, a corrective action plan would be developed and submitted to NRC for review and approval (CBR 2016, Section 7.2.5.4). To achieve this goal, CBR would install additional monitoring wells to collect water-level data that would not be impacted by groundwater withdrawals during water-quality sampling.

The model also projected the recovery times for the potentiometric surface once pumping at the existing Crow Butte license area and expansion areas had ceased. The potentiometric surface recovers to 95 percent of its preoperation levels within 10 years (CBR, 2016, Appendix GG, Figure 19).

With respect to categorizing potential impacts, the NRC staff concludes that the lowering of the potentiometric surface of the Basal Chadron Sandstone aquifer would be noticeable and would therefore result in a MODERATE impact. The resource would not be destabilized and result in a LARGE impact, however, unless the potentiometric surface falls below the top of the aquifer and the withdrawal rates exceed the ability of the natural recharge to replenish the aquifer causing the mining of the groundwater. Furthermore, the lowering of the potentiometric surface below the top of the aquifer does not necessarily destabilize the resource, as long as withdrawal rates are lower than the sustainable yield of the aquifer. As described above, there are operational incentives for maintaining confinement of the aquifer.

This scheme deprives the public and any other reviewing parties any opportunity to review or comment on these important plans. Such an “approve first – plan later” tactic renders it impossible to assess or analyze the potential impacts associated with the proposed mining operation.

As such, it violates NEPA’s requirement that the affected environment be described in the NEPA document, and within the NEPA process. These “administrative approvals” have been arbitrarily excluded from the NEPA process, and appear to be completely outside any public review or scrutiny – in violation of NEPA.

CEQ regulations specifically prohibit an agency from failing to gather necessary data in order to assess the impacts associated with a proposal. 40 C.F.R. § 1502.22 imposes detailed requirements and justifications necessary for any agency to decline to provide necessary and relevant information. In this case, this information is specifically planned to be acquired as part of the project development, but is simply being deferred until after the NEPA process.

Deferring the gathering of such information until after the NEPA process based purely on the convenience to the operator, is not allowable. Importantly, the details of how the baseline is established and documented is critical to an understanding of the potential impacts associated with the proposed mine.

As a precondition to conducting modeling and analysis, NRC must confirm that a credible scientific method is employed to establish an accurate baseline. This includes water quality information throughout the vertical extent of the affected aquifers and a spatially representative sampling protocol to provide the necessary information on ground water characteristics outside of the proposed mining zone, to accurately characterize site conditions.

EA Section 4.3.2.1 - refers to modeling which was discredited during the Crow Butte license renewal hearing. EA Section 4.3.2.1 states:

The CBR model input parameters included transmissivity, storativity, and projected consumptive use rates for each of the mine units within the existing Crow Butte license area and proposed expansion areas, except for NTEA. Transmissivity is defined by the aquifer thickness multiplied by the permeability (i.e., hydraulic conductivity). The transmissivity multiplied by the hydraulic gradient and cross-sectional area determines the volume of water flowing through an aquifer or aquitard. CBR’s model drawdown projections should be considered conservative because they do not include the impact of groundwater recharge on the Basal Chadron Sandstone aquifer over a large radius of influence.

Although CBR did not include the proposed NTEA in the analysis because it is too uncertain when or whether this facility may become operational, sufficient information could be derived from the analysis to draw reasonable conclusions had it been included. The model computed drawdown impacts over the period 2011 through 2052, corresponding to the approximate historical groundwater monitoring period at the MEA, future ISR facility operations, and the expected aquifer recovery period after all pumping has ceased. The anticipated consumptive use average yearly rates for MEA, TCEA, and the existing Crow Butte license area are provided as Attachment A (CBR, 2016, Appendix GG).

To match historical drawdowns during the model calibration process, CBR assigned a lateral “no-flow” boundary to the easternmost extent of the Basal Chadron Sandstone aquifer (see Figure 3-8). A “no-flow” boundary literally means that no groundwater flows across the boundary. The modeling assumed that this lateral no-flow boundary, which trends northwest to southeast parallel to the main mineralized trend at the MEA and existing Crow Butte license area, is located approximately 2 to 3 miles (3.2 to 4.8 km) east of the easternmost MEA permit boundary. Dickinson (1990) provides an isopach (i.e., thickness) map of the Basal Chadron Sandstone aquifer that supports this assumption, in that the Basal Chadron Sandstone aquifer is not present east of the “no-flow” boundary.

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Such unsupported assertions do not comply with NEPA's "hard look" mandate. NRC does not identify the source of the Crow Butte's "commitments," nor how Crow Butte proposes to "ensure" such protections.

Citing to a lack of evidence is of little value in terms of NEPA compliance when NRC proposes to simply defer collection of that very data that would provide that information. Simply put, NRC cannot simply state that no evidence exists when there are methods to acquire such information that can, and will be employed at a later date to, analyze this issue. Avoiding scrutiny of a difficult problem by deferring collection and analysis of such critical information until after license approval cannot stand up under NEPA.

EA Section 4.4.1.2 - states:

As described in Section 3.4.1.2, seven raptor nests were documented within the MEA in 2011, including red-tailed hawk (*Buteo jamaicensis*), burrowing owl (*Athene cunicularia*), and great horned owl (*Bubo virginianus*), and an additional 19 nests were documented within the 2.5-mile (4-km) ecological study area surveyed by the licensee. Raptors breeding on the site may be impacted by construction activities or uranium recovery operations and may be temporarily impacted depending on the time of year construction activities occur.

Mitigation Measures Are Not Adequately Analyzed

NEPA requires the agencies to: (1) "include appropriate mitigation measures not already included in the proposed action or alternatives," 40 CFR § 1502.14(f); and (2) "include discussions of: . . . Means to mitigate adverse environmental impacts (if not already covered under 1502.14(f))." 40 CFR § 1502.16(h). NEPA regulations define "mitigation" as a way to avoid, minimize, rectify, or compensate for the impact of a potentially harmful action. 40 C.F.R.

§§ 1508.20(a)-(e). “[O]mission of a reasonably complete discussion of possible mitigation measures would undermine the ‘action-forcing’ function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 353 (1989).

Specifically in the mining context, federal courts hold that NEPA also requires that the agency fully review whether the mitigation will be effective. *See South Fork Band Council v. Dept. of Interior*, 588 F.3d 718, 728 (9th Cir. 2009). “The [agency’s] broad generalizations and vague references to mitigation measures ... do not constitute the detail as to mitigation measures that would be undertaken, and their effectiveness, that the [agency] is required to provide.” *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1380-81 (9th Cir. 1998). The EA’s reliance on a future, as yet unsubmitted, mitigation to prevent/mitigate adverse impacts to these resources also violates NRC duties under NEPA and the National Historic Preservation Act [NHPA]. The NHPA, and its implementing regulations, require full review of these impacts as part of the public review process – something which has not occurred here.

Thus, to the extent NRC relies on mitigation for any impacts, such mitigation must be specifically spelled-out, at least in reasonable detail, and the effectiveness of the proposed mitigation must be analyzed. In this case, the EA expressly relies on mitigation in justifying a preliminary recommendation to issue the proposed license. Unfortunately, the proposed mitigation consists overwhelmingly of a list of plans to be developed later, outside the NEPA process. Much like the failure to analyze baseline data, the EA fails to provide any of the required detailed analysis of proposed mitigation measures, and makes no attempt to evaluate the effectiveness of any of the proposed mitigation.

For instance, the EA repeatedly refers to Crow Butte’s commitment to restore groundwater back to its pre-mining condition. The EA simply states that Crow Butte will be required to restore aquifers to background concentrations. However, such assurances, without any evaluation of how effective these restoration efforts are expected to be, do not satisfy NEPA.

EA at page 4-24:

The purpose of aquifer restoration at the MEA would be to return the groundwater quality in the production zone to compliance with the groundwater protection standards in 10 CFR Part 40, Appendix A, Criterion 5B(5). These standards, described in License Condition 10.6 (NRC, 2014f), require that the concentration of a hazardous constituent must not exceed (1) the Commission-approved background concentration of that constituent in groundwater, (2) the respective value in the table in paragraph 5C of the regulation if the constituent is listed in the table and if the background value of the constituent is below the value listed, or (3) an alternate concentration limit the Commission establishes. Since the objective of aquifer restoration would be to return the Basal Chadron Sandstone aquifer groundwater to meet groundwater protection

standards, the NRC staff concludes that any adverse environmental impacts on the Basal Chadron Sandstone aquifer groundwater quality from aquifer restoration would be SMALL. Furthermore, once groundwater is restored in the exempted region of the Basal Chadron Sandstone aquifer to approved groundwater protection standards, the future impact on groundwater quality in the nonexempt portions of the Basal Chadron Sandstone aquifer would be negligible.

Here, historic evidence demonstrates that ISL uranium mines have a very poor record of restoring ground water aquifers – in fact, none have ever actually restored an aquifer. Indeed, as recently described by the U.S. Geological Survey, “to date, no remediation of an ISR operation in the US has successfully returned the aquifer to baseline conditions. Often at the end of monitoring, contaminants continue to increase by reoxidation and resolubilization of species reduced during remediation.” *J.K. Otton, S. Hall, “In-situ recovery uranium mining in the United States: Overview of production and remediation issues,” U.S. Geological Survey, 2009 (IAEA-CN-175/87)*. Similar post-mining increases in contamination levels in impacted aquifers are described in more detail in other USGS publications. *See Hall, S. “Groundwater Restoration at Uranium In-Situ Recovery Mines, South Texas Coastal Plain,” USGS Open File Report 2009-1143 (2009)*(attached as Exhibit 5). Independent research focused on ISL uranium mining efforts in Texas also demonstrated the ineffectiveness of industry and regulatory agency assurances of the ability to restore aquifers to pre-mining water quality. *Darling, B., “Report on Findings Related to the Restoration of InSitu Uranium Mines in South Texas,” Southwest Groundwater Consulting, LLC (2008)*.

These issues echo the issues regarding repeated failures of industry and regulators to meet pollution control assurances. Lastly, investigative journalism pieces have also exposed the lack of effective mitigation for ISL uranium mining operations such as that proposed at Marsland. *See Lustgarten, Abrahm, “On a Wyoming Ranch, Feds Sacrifice Tomorrow’s Water to Mine Uranium Today,” ProPublica, Dec. 26, 2012* .

The ISL industry’s historic and ongoing inability to control aquifer contamination and restore groundwater impacted by ISL uranium mining must be acknowledged and competently addressed within the NEPA process. While the EA presents some general methods for restoration of the groundwater following mining operations, it does not provide detail as to how this proponent expects to succeed where all others have failed, assess any objective criteria for the effectiveness of these methods, nor how these issues affect the potential impacts of the proposed project. A detailed evaluation of the effectiveness of any proposed mitigation measure is required by NEPA. This lack of analysis of proposed mitigation measures is expansive, and not limited to ground water mitigation. To comply with NEPA, each mitigation measure must be detailed with specific description, supporting data, and analysis of process and effectiveness within the context

NEPA document. As it stands, the NRC must conduct this necessary work, then re-issue the EA for meaningful public and agency review.

EA Section 4.3.1.1 -

Breaks in the buried lines would be unlikely because the lines would be below the frost line (thereby protecting them from vehicular traffic), and comprised of HPDE. Although pipe leaks and breaks would be possible, the potential releases would be small because CBR would leak test the piping before placing the piping into service, and continuously monitor the flows through the wellfield piping and manifold pressure gauges in the wellhouses by control room operators using visual and audible alarms.

Cumulative Impacts Have Not Been Adequately Addressed

“The CEQ regulations require agencies to discuss the cumulative impacts of a project as part of the environmental analysis. 40 C.F.R. § 1508.7.” *Davis v. Mineta*, 302 F.3d at 1125 (10th Cir. 2002). “Of course, effects must be considered cumulatively, and impacts that are insignificant standing alone continue to require analysis if they are significant when combined with other impacts. 40 C.F.R. §1508.25(a)(2).” *New Mexico ex rel. Richardson*, 565 F.3d at 713, n. 36.

Federal courts have recently interpreted the cumulative impact requirement in the mining context:

In a cumulative impact analysis, an agency must take a “hard look” at all actions. [A NEPA] analysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment.... Without such information, neither the courts nor the public ... can be assured that the [agency] provided the hard look that it is required to provide.

Te-Moak Tribe of Western Shoshone, 608 F.3d 592, 603 (9th Cir. 2010) (rejecting NEPA document for mineral exploration that had failed to include detailed analysis of impacts from nearby proposed mining operations).

A cumulative impact analysis must provide a “useful analysis” that includes a detailed and quantified evaluation of cumulative impacts to allow for informed decision-making and public disclosure. *Kern v. U.S. Bureau of Land Management*, 284 F.3d 1062, 1066 (9th Cir. 2002). The NEPA requirement to analyze cumulative impacts prevents agencies from undertaking a

piecemeal review of environmental impacts. *Earth Island Institute v. U.S. Forest Service*, 351 F.3d 1291, 1306-07 (9th Cir. 2003).

The NEPA obligation to consider cumulative impacts extends to all “past,” “present,” and “reasonably foreseeable” future projects. *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 971-974 (9th Cir. 2006) (requiring “mine-specific ... cumulative data,” a “quantified assessment of their [other projects] combined environmental impacts,” and “objective quantification of the impacts” from other existing and proposed mining operations in the region).

This cumulative impacts analysis thus must address not only past uranium mining in the region, but also present and foreseeable uranium development.

This cumulative impacts analysis must include an assessment of the cumulative impacts to cultural and historic resources. While the EA contains a section describing the efforts the applicant and NRC Staff have conducted (EA at 5-9 to 5-12), there is no acknowledgement of the gaps in the cultural resources analysis, including the lack of any competent cultural resources of any Lakota Sioux. NRC Staff must conduct a credible cultural resources survey in order to assess the cumulative impacts as required by NEPA.

Other mining development in and around the Black Hills region must be evaluated, including the other Crow Butte/Cameco operations in Nebraska and the proposed Powertech Dewey Burdock mine in Fall River and Custer Counties, South Dakota.

EA 3.3.1.2 states there is E. Coli in the Niobrara River and that the Northern Pike in the Box Butte Reservoir have mercury concentrations, but the EA does not state how the proposed ISL mining operations in the MEA will impact the Niobrara River and the Box Butte Reservoir. Is it likely to make the current problems worse? Clearly, the river and the reservoir are related in terms of proximity and flow with the Reservoir being downstream from the MEA. Will the proposed activity, taken together with the current problems, lead to other problems not mentioned in the EA?

Faulting and Fracturing; Failure to Fully Evaluate and Analyze Impacts and Risks Related to ISL Mining in a highly faulted and fractured area such as the MEA. See EA Section 3.2.2.2 (“CBR further concludes that the exclusion of the existence of a large-offset fault eliminates the potential for such a feature to act as a boundary for groundwater flow and movement that could impact production operations at MEA (CBR, 2014, Section 3.3.1.3).”).

The foregoing is circular reasoning whereby the hypothetical ‘exclusion of the existence of a large-offset fault eliminates’ the real world risk that such a ‘feature’ could act as a boundary for groundwater flow and movement that could impact production operations at MEA’. *Id.*

*** Visual Impacts

3.10 of EA states:

Technical discussions with the Nebraska National Forest, Pine Ridge Ranger District staff indicate that it is unlikely that activities associated with the proposed project at the MEA would be visible from most of the USFS land, including the Pine Ridge National Recreation Area (SC&A, 2012).

4.10 Visual and Scenic Resources

As noted in the ISR GEIS (NRC, 2009a, Section 4.2.9.1), most potential visual and scenic impacts associated with drilling and other land-disturbing construction activities would be temporary in duration; roads and structures would be present for a longer duration but eventually removed and the land reclaimed. Impacts of operation, aquifer restoration, and decommissioning would be the same or less than those associated with construction. The greatest potential for visual impacts would be for new facilities operating in rural, previously undeveloped areas or within view of sensitive regions. Given the distances of existing and potential uranium ISR facilities from these areas, the ISR GEIS (NRC, 2009a, Section 4.4.9.2) anticipates that potential visual and scenic impacts introduced by ISR facilities would be small.

4.8.2

The potential radiological impacts of IX resins from ISR sites such as the MEA are expected to be lower than those from the transport of yellowcake because (1) IX resins are less concentrated and therefore contain less uranium per shipment than a yellowcake shipment, (2) the uranium in IX resins is chemically bound to the resins and less likely to spread and easier to remediate in the event of a spill, and (3) IX resins typically are not shipped as far as yellowcake. The distance from the MEA to the existing Crow Butte license area for processing is about 30 miles (48.3 km), using the primary access route. The potential impacts from solid waste shipments to disposal

facilities would not be significant because of the low levels of radioactivity associated with the waste and compliance with packaging and transportation regulations. The potential impacts of any groundwater shipments (which would be 11e.(2) byproduct material), which would be related to an extended shutdown of the MEA, to the ponds at the existing CBR license area would also not be significant, given their small number and lower concentrations of radioactivity.

The EA Fails to Consider All Reasonable Alternatives

The range of alternatives is “the heart of the environmental impact statement.” 40 C.F.R. § 1502.14. NEPA requires agencies to “rigorously explore and objectively evaluate” a range of alternatives to proposed federal actions. See 40 C.F.R. §§ 1502.14(a) and 1508.25(c). “An agency must look at every reasonable alternative.” *Northwest Env'tl. Defense Center v. Bonneville Power Admin.*, 117 F.3d 1520, 1538 (9th Cir. 1997). An agency violates NEPA by failing to “rigorously explore and objectively evaluate all reasonable alternatives” to the proposed action. *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1310 (9th Cir. 1990) (quoting 40 C.F.R. § 1502.14). This evaluation extends to considering more environmentally protective alternatives and mitigation measures. See e.g., *Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094, 1122-1123 (9th Cir. 2002) (and cases cited therein).

NEPA requires that an actual “range” of alternatives be considered, so that the Act will “preclude agencies from defining the objectives of their actions in terms so unreasonably narrow that they can be accomplished by only one alternative (i.e. the applicant’s proposed project).” *Colorado Env'tl. Coalition v. Dombeck*, 185 F.3d 1162, 1174 (10th Cir. 1999), citing *Simmons v. United States Corps of Engineers*, 120 F.3d 664, 669 (7th Cir. 1997).

This requirement prevents the EIS from becoming “a foreordained formality.” *City of New York v. Department of Transp.*, 715 F.2d 732, 743 (2nd Cir. 1983). See also *Davis v. Mineta*, 302 F.3d 1104 (10th Cir. 2002).

Numerous unexplored and unreviewed alternatives exist. For instance, the NRC should consider an alternative that precludes adoption of any Alternate Concentration Limits (ACL’s) for ground water restoration. This is a reasonable alternative, as this is the law in places such as Colorado.

Further, NRC should consider an alternative of allowing the proponent to move forward with mining of additional well-fields only upon a demonstration that it has operated without excursions, and has restored and demonstrated long-term stability of restoration in previously-mined well-fields. Along these lines, NRC should consider an alternative of allowing operations

at either the Dewey or Burdock areas only upon a demonstration that the other area has been successfully mined without excursion and with full, stable, restoration, and only allowing uranium extraction to occur in areas of the aquifers demonstrated to be confined – and disallow any extraction from aquifers, or portions of aquifers, for which the applicant has not yet demonstrated confined conditions.

The EA Fails to Adequately Address Impacts to Cultural Resources, or Comply with the NHPA

The EA violates NEPA and the NHPA because it fails to include a comprehensive analysis of cultural impacts. In fact, it appears that despite the application having been pending for some five years, there has yet to be done a competent cultural resource inventory of the site. Simply put, the NRC should not have released the admittedly incomplete EA.

Crow Butte had an obligation at the application stage to provide a competent analysis of cultural resources – and it failed to do so. The fact that the company has been either unwilling or unable to gather competent information does not provide a basis to pressure NRC staff to issue an incomplete EA. It is not an excuse that the NHPA section 106 consultation duties are the responsibility of NRC, rather than that of Crow Butte.

Crow Butte has no reasonable expectation that its proposed mine in an area of significant cultural importance would not require the requisite detailed review of cultural resources and impacts thereto. The fact that NRC decided instead to issue the EA rather than complete its information violates NEPA's requirements to provide meaningful public comment or review. NRC should suspend the EA process until such information is available, and reissue the draft when the necessary information is acquired and fully reviewed.

6) Dr. Louis Redmond's opinion after reviewing the EA is as follows:

A) There are likely prehistoric camp sites and related process sites. Throughout this proposed project area, there are a number of both permanent and intermittent water resources of all kinds, including creeks, springs and natural ponds.

B) The survey that was performed in this area was over approximately 4,500 acres, which was surveyed between November 2010 and February 2011. During that time of the year, snow and ice covered most of the ground surface, at least greater than 85%. In this scenario it would be relatively impossible to locate 99% of prehistoric/Native American sites without a much higher level of ground surface observation, i.e., greater than 60-75%, preferably greater than 90%. As stated in the synopsis of the cultural report, this area of the Nebraska Panhandle has not been subjected to even minor investigation. Due

to this lack of research, an investigation with little or no ground surface visibility would be insufficient to state that no Native American/prehistoric materials were present.

C) This project will eventually cause significant ground disturbance, and yet there is no evidence that any type of subsurface testing process for any level of cultural materials took place. It would seem that some form of subsurface testing to at least below the alluvium level be performed over at least the area where most of the surface impacts will occur. This type of processing be instituted on at least the higher elevations near water resources where the alluvium layer would be shallower due to natural erosional processes.

D) Although it is true that the primary tribal use of this area was by the Sioux (sic) and Cheyenne, a number of tribes utilized the Nebraska Panhandle area. According to just the treaties from this area, a number of tribes are not noted for this cultural review. One of the most encompassing of these treaties is the 1851 Fort Laramie Treaty involving the Sioux or Dahcotah (sic), Cheyennes, Arrapahoes, Crows, Assinaboines, Gros-Ventre Mandans, and Arrickaras. The People listed as “Sioux or Dahcotah” are not easily defined, but include the Lakota Nations of the Sicangu, Brule, Oglala, Minnecoujou, Hunkpapa, Izipaco, Sihasapa, and Ooinunpa nations. Added to these are the Sans Arcs, Santee and Yanktons who are Dakota speakers. The Mandans and Arrickara noted in the said treaty would also include the Hidatsa peoples of the Three Affiliated Nations. As to the Cheyenne defined in the 1851 Treaty, this would indicate both the current Northern and Southern Cheyenne Nations since the division is an artificial artifact of the Government reservation system. In addition, although not listed in this treaty, the Pawnee would also have utilized this area, at least the northern Pawnee or Skidi. This last is indicated by the number of stories, legends or accounts of battles between the Pawnee and many of the above noted Peoples throughout the current project areas. Added to this treaty are a number of other treaties signed with individual tribes between 1851 and 1868, the time period of the two major treaties signed by the United States and a number of interested or subjugated tribes.

E) The Marsland area itself has never been subjected to any qualified, in depth Level III Cultural Resource survey.

7) The EA describes the same Consultation Procedure as was used in the CBR Renewal Which Was Found Inadequate in LBP 16-07, at 8.

3.6.4 Tribal Consultations for the Marsland Expansion Area

The Federal government and the State of Nebraska recognize the sovereignty of federally recognized Native American Tribes. NEPA encourages Federal agencies to

consult with Indian Tribes in the planning process for a proposed Federal action; NHPA Section 106 requires Federal agencies to undertake consultation and coordination with each Tribal government that may have an interest in historic properties within the proposed project area. Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments," issued November 2000, excludes from the requirements of the order, "independent regulatory agencies, as defined in 44 U.S.C. § 3502(5)." However, according to Section 8 of the executive order, "Independent regulatory agencies are encouraged to comply with the provisions of this order." Although the NRC is explicitly exempt from the order, the Commission remains committed to its spirit. The agency has demonstrated a commitment to achieving the order's objectives by implementing a case-by-case approach to interactions with Native American Tribes. The NRC's case-by-case approach allows both the NRC and the Tribes to initiate outreach and communication with one another.

3.6.5 Places of Religious or Cultural Significance

3.6.5.1 Background

Continued consultation with the Tribes and an onsite field assessment will help identify places that possess cultural and religious significance to the Tribes. Any identification of sacred or traditional places must be verified in consultation with authorized Tribal representatives.

8)The NRC should have given the same notice to the OST THPO in same manner and at the same time as was given to the NE SHPO –

3.6.5.2 Potential Places of Religious or Cultural Significance

In June 2014, the NRC staff posted documents pertaining to NHPA Section 106 on its Web site and solicited comments, particularly any information that would call into question any of the conclusions stated in the NRC's summary or in the posted documents (NRC, 2014c). These documents included the Santee Sioux and Crow Nations TCP field survey, the report from the summer 2013 field visit, and the draft cultural resources sections of this draft EA. The NRC received no comments.

On October 30, 2014 (NRC, 2014d), the NRC requested the NE SHPO's concurrence with the NRC's finding of no historic properties present for the MEA, based on these surveys and the NRC's draft text for this section of the EA. In a letter dated November 18, 2014 (NSHS, 2014), the NE SHPO concurred with the findings that the proposed project would affect no archaeological, architectural, or historic context property resources.

4.6.2 Places of Religious or Cultural Significance

Two of the consulting Native American Tribes surveyed the entire MEA for potential places of religious or cultural significance (Santee Sioux Nation, 2013), resulting in the identification of 12 possible places. These two Tribes completed a TCP survey report, which indicated that none of the identified places is eligible for listing on the NRHP; however, the report recommended that CBR observe a buffer zone with a radius of either 100 or 200 feet (30 or 61 meters) during project construction and operation activities and use Tribal monitors if there are future project impacts in the immediate vicinity of the identified places (Santee Sioux Nation, 2013). Following the Tribal field survey, the NRC acquired additional information about each of the identified places through a field documentation effort. This additional field documentation and evaluation of these places confirmed that none of the places the Tribes identified is considered eligible for listing on the NRHP (SC&A, 2013a, 2013b). The NRC provided this further documentation of the Tribal places to the consulting Native American Tribes for their review and comment. The NRC received no comments.

NRC Staff states that it is continuing to consult with certain Tribes. However, some of this consultation has not been as productive as anticipated by the Tribes, including the Oglala Sioux Tribe with respect to historical and cultural survey.

Significant Historical and Cultural Impacts Are Anticipated for Small Impacts to Local Economy

The proposed project is expected to have a small impact upon the socioeconomics of the area throughout all phases of the project.

The MEA project would require an additional 10 to 12 full-time CBR employees, 4 to 7 full-time contractor employees, and 10 to 15 part-time CBR employees and short-term contractors for construction activities. EA at 4-39.

And EA at 4-40:

Given these factors, the NRC staff concludes that the potential direct socioeconomic impacts resulting from this project would be SMALL and primarily beneficial because of the small increase in the number of people employed and associated tax revenue, regardless of the mining production rate.

Failure to Properly Account for Waste Disposal

The applicant proposes to rely on Reverse Osmosis (RO) for treatment of its liquid wastes. In fact, for the deep waste disposal alternative, Crow Butte proposes to rely primarily on RO for water treatment.

The EA does not competently account for the extent of the waste that will be generated. The EA states, without any support, that Crow Butte will recover most of the treated water as usable permeate. EA at 2-13. However, according to government estimates, reverse osmosis can result in a loss of upwards to 95% of the liquid, which would be left in the waste, leaving a more significant waste stream than analyzed in the EA. *See University of North Dakota State University, "Reverse Osmosis" AE-1047 (2008)*. This government document states that reverse osmosis is also prone to fail if not meticulously maintained, and further is not advised for larger volumes of water due to the significant water loss and waste associated with the process. The EA must accurately review Crow Butte's plan regarding waste disposal to analyze and compensate for these factors.

Transportation and Disposal of Radioactive Material

The EA references the transport of radioactive waste materials, but does not address or analyze the impacts associated with the disposal of the 11e2 byproduct material. EA at 4-45 to 4-46; 4-56. This lack of analysis is insufficient. Further, without this analysis, the NRC Staff cannot rely on an EA, as it lacks sufficient basis to conclude that the project may not have a significant impact.

Where a byproduct materials license is being contemplated in the licensing action, NEPA demands that on-site creation and storage of the solid 11e2 byproduct must be fully analyzed along with an analysis of the plan for off-site shipment and disposal of the waste. Yet, the EA

does not analyze the impacts or potential mitigation measures for a range of alternatives available for storing and disposal of solid 11e2 byproduct during operations and during decommissioning and closure. Although 11e2 byproduct will be created during the operations phase, particularly related to maintenance, repair, and the rolling closure of well-fields, the EA does not analyze the impacts or alternative plans to store these solid 11e2 byproduct materials.

Instead, the EA contains only a vague intent to ship these materials to an existing disposal site at White Mesa, UT, without analyzing the impacts associated with this transportation and disposal. EA at 4-46; 4-56. Indeed, the EA identifies Denison Mines as the owner of the site, which is inaccurate. EA at 4-56.

Because off-site transport and off-site disposal of 11e2 byproduct is an integral part of the present federal action, these impacts and the impacts of on-site storage in anticipation of transport for off-site disposal must be revealed and analyzed in the EA. This EA for the licensing of the creation, storage, transport, and disposal of solid byproduct materials must include disclosure and analysis of reasons why the past and present management of disposal sites such as the White Mesa Mill have been unable to meet state and federal standards. According to data published on the Mine Safety Health Administration website, recent inspections identified violations that resulted in tens of thousands of dollars of fines. Other issues of ongoing groundwater contamination, off-site air deposition of radioactive materials at the White Mesa Mill, and other impacts to the local communities such as environmental justice issues, must also receive NEPA analysis. Because NRC relies on off-site disposal sites for the wastes, the agency must analyze these and other impacts associated with the operation and disposal of the wastes at the site. Similarly, alternative disposal sites were improperly not identified or analyzed in the EA.

Reliance on the Generic Environmental Impact Statement is Unwarranted

At the time the GEIS was issued, substantial critical public comments regarding the process for the GEIS were lodged. NRC appears to not have taken up a discussion of any of the critiques offered on that document. As such, reliance on GEIS is not warranted. Because the GEIS itself did not comply with NEPA, both in process and in substance, it cannot be relied upon in this EA. NRC must fully review the comments submitted on the GEIS and assess how those comments affect this EA. Failure to do so allows the agency to rely on the GEIS without compliance with NEPA – a violation of NEPA that carries forward to the EA.

Solid 11e2byproduct Impacts and Environmental Justice

Where a byproduct materials license is being contemplated in the licensing action, NEPA demands that on-site creation and storage of the solid 11e2 byproduct must be fully analyzed in a EA along with an analysis of the plan for off-site shipment and disposal of the waste. Yet, the EA does not analyze the impacts or potential mitigation measures for a range of alternatives

available for storing and disposal of solid 11e2 byproduct during operations and during decommissioning and closure.

Further, the EA does not analyze the impacts or alternative plans to store these vaguely referenced solid 11e2 byproduct materials. Instead, the EA contains a stated intent to ship these materials to the Denison's White Mesa Mill site near Blanding, UT (see EA at 5-20) and the Ute Mountain Ute Community at White Mesa. The confirmed lack of suitable onsite locations for disposal of solid 11e2 byproduct were not revealed or analyzed in the EA.

Because off-site transport and off-site disposal of 11e2 byproduct is an integral part of the present federal action, these impacts and the impacts of on-site storage in anticipation of transport for off-site disposal must be revealed and analyzed in the EA. This EA for the licensing of the creation, storage, transport, and disposal of solid byproduct materials must include disclosure and analysis of reasons why the past and present management of the White Mesa Mill have been unable to meet state and federal standards.

According to data published on the Mine Safety Health Administration website, recent inspections identified violations that resulted in tens of thousands of dollars of fines. Other issues of ongoing groundwater contamination and off-site air deposition of radioactive materials at the White Mesa Mill must also receive NEPA analysis. Because NRC relies on White Mesa as the disposal site for the wastes, the agency must analyze impacts associated with the operation and disposal of the Crow Butte wastes at the White Mesa location. Similarly, alternative disposal sites were improperly not identified or analyzed in the EA – despite admissions that alternate sites may be necessary due to lack of any existing contract for solid 11e2 byproduct disposal space.

Additional and serious environmental justice issues are raised by the assumption that these solid 11e2 byproduct materials will be sent to San Juan County, Utah. Census data confirms that San Juan County, Utah is comprised of 49% “American Indian and Native Alaska persons.” <http://quickfacts.census.gov/qfd/states/49/49037.html>. “White persons not Hispanic” only comprise 44.2% of San Juan County's population, and 29.4% of the county population lives below the poverty line. *Id.*

The NRC's past practice of relying on project proponent assumptions and future promises to find a disposal site at some date after licensed wastes are created did not work at reactors. This repudiated practice of creating waste without a confirmed disposal site cannot be allowed to extend to the MEA project.

Even if this were permissible under UMTRCA and applicable NRC rules (esp. Appendix A), which it is not, NEPA requires that NRC must fully disclose and analyze the foreseeable impacts of solid 11e2 byproduct disposal.

The present EA is fatally flawed, as it fails to disclose and analyze all the impacts of creation,

storage, transport, and disposal of solid 11e2 byproduct. A new NEPA scoping notice must issue that reveals the project area for the 11e2 byproduct license includes the Utah disposal site and the transportation routes, as well as other reasonable alternative disposal plans.

Threatened and Endangered Species

Endangered Species Act Section 7 consultation was not completed, and imperiled species were glossed over in the EA. Endangered/Threatened Species: Whooping Crane - the Niobrara is on the path of the only wild population of whooping cranes. Section 3.4.3.1 of the EA states that “Because little suitable habitat occurs within the MEA, the species is not likely to be found there.” That statement doesn’t make any sense. The whooping cranes stop over, they don’t habitate there.

The EA also forwards an unreasonably bounded analysis regarding the, whooping crane, raptors and eagles:

3.4.3.1 Federally and State-Listed Species

Whooping Crane

The USFWS listed the whooping crane as endangered wherever found in 1967 on the original endangered species list under the Endangered Species Preservation Act of 1966 prior to the ESA’s promulgation. The USFWS designated critical habitat for the species in 1978, and the current designations include an 80-mile (129-km) stretch of the Platte River in central Nebraska. The NGPC have also designated the species as endangered at the State level. The whooping crane is the tallest bird in North America (NGPC, 2013c). Currently, the only wild (naturally occurring) population of whooping cranes lives in Texas and migrates along the Central Flyway to breeding grounds in Canada. The range map depicting habitat use during migration and USFWS-designated critical habitat depicts this pathway as including central Nebraska, which excludes Dawes and Box Butte Counties (NGPC, 2013a). However, the NGPC (2013a) reports confirmed records of the whooping crane in northwestern Dawes County. According to the USFWS, the whooping crane is known or believed to occur in Dawes County (USFWS, 2015b, 2016a, 2016b). Whooping cranes eat both plants and animals found in agricultural fields, wet meadows, marsh habitats, and shallow rivers. The species typically selects sites with wide, open views and areas that are isolated from human disturbance and prefers to roost in shallow braided riverine habitats and wetlands. As stated in Section 3.4.2, there is one small (125 acres (50.5 ha)) wetland site on the western border of the MEA. While migrating through Nebraska, whooping

cranes use riverine habitats such as the Niobrara River and a variety of wetland habitats as important stopover and resting spots during both spring and fall migrations (NGPC, 2013c). The Niobrara River is located below the southern boundary of the MEA, although it is within the 2-mile (3.3-km) area of review. Because little suitable habitat occurs within the MEA, the species is not likely to be found there.

Endangered Species

Whooping Crane: The EA acknowledges that the Whooping Crane is listed as an endangered species under the federal Endangered Species Act. Further, the EA concedes that occupiable habitat is found within the boundaries of the project area. However, instead of conducting a credible survey or presenting any other competent scientific evidence, the EA simply offers the unsubstantiated conclusion that: “[b]ecause little suitable habitat occurs within the MEA, the species is not likely to be found there.” EA at 3-61.

Northern Long-Eared Bat: The EA acknowledges that the Northern Long-Eared Bat is listed as threatened under the federal Endangered Species Act. The EA further concedes that the species occurs in the area of the proposed project and that it roosts in concealed spaces such as cavities, crevices, hollows or underneath bark in both live and dead trees. While the EA states that a survey did not locate any of the species, that should not be a great surprise given its inconspicuous nature. EA at 3-59 to 3-60.

The EA states that “the NRC staff determined that two federally listed species, the northern long-eared bat (*Myotis septentrionalis*) and whooping crane (*Grus americana*), have the potential to occur in the MEA action area (NRC, 2017a).” EA at 3-58. As to impacts to the bat, the EA asserts that “impacts to forested areas in the MEA would not significantly affect northern long-eared bat.” EA at 4-32. However, NRC Staff goes on to conclude that “the MEA project is not likely to adversely affect this species.” *Id.* These contradictory statements cannot be squared. As such, the NRC Staff’s conclusion of “not likely to adversely affect” is not supported. Rather, NRC Staff must initiate formal ESA consultation with U.S. Fish and Wildlife Service regarding this species. Similarly, for Whooping Crane, despite the acknowledgement of Whooping Crane habitat in the area, the EA makes the assertion that “the MEA project is not likely to adversely affect this species.” EA at 4-32. As with the bat, this conclusion is not supportable. Indeed, for both species, no formal documentation of an analysis of the actual impacts from the proposed project is presented to justify these conclusions. Rather, NRC Staff must initiate formal ESA consultation with U.S. Fish and Wildlife Service regarding this species.

5) **Endangered/Threatened Species: Eagles** - Section 3.4.3.2 of the EA states that “Golden eagles and bald eagles (*Haliaeetus leucocephalus*) are also protected by the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.) and may be in the area of the MEA

(NGPC, 2014; USFWS, 2013).... Bald eagles are present in the vicinity of the MEA during the winter and use surrounding habitat for feeding and roosting (HWA 2012).” Then NRC Staff reach a conclusion that “Although suitable habitat exists, no regularly inhabited roosts have been identified in the project area. Data from 2013 indicate that a number of active nests exist across Nebraska, although none are in Dawes or Box Butte counties (NGPC, 2013f).”

NEPA requires further investigation and analysis. There has been no survey for eagles within the MEA for eight years despite the 2010-2011 finding that the MEA contains suitable habitat and the finding that bald eagles are present “in the vicinity of the MEA during the winter and use surrounding habitat for feeding and roosting.” This means that impacts of potential spills and excursions, air and noise from the proposed activity must be evaluated on the eagles and their food supply - smaller animals that are present in and around the MEA.

3.4.3.2 Other At-Risk Species

Golden eagles and bald eagles (*Haliaeetus leucocephalus*) are also protected by the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.) and may be in the area of the MEA (NGPC, 2014; USFWS, 2013). Bald eagles use mature, forested riparian areas near rivers, streams, lakes, and wetlands and occur along all the major river systems in Nebraska (USFWS, 2013). Like golden eagles, they frequent the open water and forested corridors of Nebraska river systems, such as that south of the MEA, during the winter for feeding, perching, and roosting. A CBR-sponsored survey in winter 2010–2011 did not identify bald eagles within the MEA but did find one adult bald eagle within 2.5 miles (4 km) of the project area (HWA, 2012). Bald eagles are present in the vicinity of the MEA during the winter and use surrounding habitat for feeding and roosting (HWA 2012). Although suitable habitat exists, no regularly inhabited roosts have been identified in the project area. Data from 2013 indicate that a number of active nests exist across Nebraska, although none are in Dawes or Box Butte counties (NGPC, 2013f).

Further, language used in the EA could misinform the public and the decisionmaker, particularly where the indirect effects to the endangered whooping crane is expected to occur at the site during migration.

4.4.2.2 Whooping Crane

While there has been at least one record of whooping cranes occurring in Dawes County (see Section 3.4.3.1), there have been no recorded sightings in the action area, and the action area generally lacks suitable habitat (i.e., wetlands). The species is most likely to occur in the area during migration periods, which in Nebraska are approximately from March 23 through May 15 and from September 16 through November 16. With the relative lack of suitable habitat in the form of wetlands in the MEA and the rare occurrence of whooping crane sightings, the NRC staff concludes that the MEA project is not likely to adversely affect this species.

Federally listed species are known to occur on the proposed MEA site. See EA Table 3-8 Federally and State-Listed Species with the Potential to Occur in the MEA Action Area.

Observation of a listed species within the project site is not relevant to the question of whether or not there will be a direct impact to these species. The analysis, having been arbitrarily constrained, must be presented in a new EA that recognizes the on and off-site impacts on wildlife, including but not limited to those species listed under the Endangered Species Act.

As confirmed by the Supreme Court, where staff's conclusions deviate from those of the USFWS regarding species impacts, "the action agency must not only articulate its reasons for disagreement (which ordinarily requires species and habitat investigations that are not within the action agency's expertise), [the action agency] runs a substantial risk if its (inexpert) reasons turn out to be wrong." *Bennett v. Spear*, 520 U.S. 154, 169 (U.S. 1997)(discussing possible criminal and civil penalties that may be imposed on agencies and "its employees").

As with the whooping crane, the EA does not document any attempt to seek USFWS concurrence or consultation regarding a listed species that the Crow Butte project "may effect."

Instead, the EA reveals that suitable habitat exists within the project area. On operations, the EA makes a "no-jeopardy" conclusion without benefit of the ESA Section 7 consultation process.

Although impacts are identified, there is no evidence that NRC's determination is based on the necessary expertise and investigations. See EA at 4-43:

The golden eagle, bald eagle, Swainson's hawk, and prairie falcon are all likely to occur in the MEA. The considerations discussed in Section 4.4.1.2 with regard to raptors would also apply to these species. There are no particular characteristics of these species that would make them particularly vulnerable to impacts from the proposed ISR activities. Given that CBR would conduct nest searches before the start of construction

and enact mitigation measures for powerline mortality, the NRC staff concludes that the potential impacts to these raptor species would be SMALL.

See Bennett v. Spear, 520 U.S. 154, 158 (U.S. 1997)(describing statutory Section 7 process that is required to ensure an agency does not threaten the “continued existence” of listed species). As described above, the NRC and its employees ignore the ESA consultation requirements “at its own peril.” *Id.* at 169. Further, there is no basis to segregate the ESA consultation from the NEPA analysis.

However, a detailed examination of the impacts on wildlife from waste disposal is not provided. Most egregious, the impacts of transporting solid 11e2 byproduct materials to Utah are not analyzed. There is no mention of these foreseeable disposal and decommissioning impacts in the correspondence with USFWS. For example, all travel routes to Utah implicate the listed Lynx.

Proper consultation with USFWS will no doubt reveal other listed species beyond those identified by NRC staff. Many other impacted and listed species must be examined in a correlated ESA consultation and NEPA analysis that is based on a project area for the 11e2 byproduct license that includes the assumed Utah disposal and the transportation routes. Section 7 consultation with USFWS must be engaged based on a full range of foreseeable impacts of the 11e2 byproduct licensing action, including the confirmed need for off-site disposal of solid radioactive materials during operation and closure.

Global Warming and Long-Term Impacts

4.5.2.2 Potential Effect of Climate Change on the Marsland Expansion Area

As discussed in Section 3.5.1 of this EA, climate change impacts include an increase in temperatures and resultant surface water loss, with minimal change to precipitation patterns. Much of the activity associated with the ISR process that would be used for uranium recovery at the MEA occurs below ground. Climate change impacts to temperature and surface water availability are unlikely to impact activities at the MEA because the proposed action would use groundwater for these activities. Groundwater availability is not projected to change in the Great Plains region. Because there is little overlap between climate change projections and the environmental impacts of the MEA activities, the environmental impacts to specific resources should not be altered because of climate change, and therefore the NRC staff concludes that climate change impacts would be SMALL.

The EA should be reissued with a clearly articulated project lifetime and a cumulative impacts analysis that corresponds with the project lifetime and the foreseeable long-term impacts of the proposed project. Particular to global warming, the carbon disposal capacity of Earth's atmosphere throughout the lifetime of the project should be addressed in a similar manner to the analysis used for the diminishing availability of solid waste disposal facilities. Whether the waste stream is carbon emissions or solid waste, the recognized lack of disposal capacity going forward must be analyzed.

Cooperating Agencies

Consistent with NEPA's "one EIS" requirement, all agencies of the federal government are required to cooperate in the analysis of a federal action to ensure a comprehensive and efficient analysis of the impacts on the environment from the perspective of present and future generations. 42 USC §§ 4331(a), 4332(2). The NEPA regulations implement the mandate that Federal agencies prepare NEPA analyses and documentation "in cooperation with State and local governments" and other agencies with jurisdiction by law or special expertise. 40 CFR §§ 1501.6, 1508.5. This requirement is consistent with the NEPA mandates that prevent the federal officials from delaying and segmenting analysis of a project so as to avoid the required analysis of the full project by sweeping difficult problems under the rug. Thus, it is mandatory for all federal agencies to be included as cooperating agencies where such agencies have jurisdiction or special expertise. Although it is not mandatory for all federal, state, and local governments to participate, it is the lead agency's duty to take the necessary steps at the "earliest possible time" to provide a meaningful opportunity for such government entities to participate as cooperating agencies.

The NRC staff, in preparing the EA, was required to utilize the analysis and proposals of the "cooperating agencies" to the "maximum extent possible." 40 CFR §§ 1501.6(a)(2). Instead, the NRC has ignored its lead agency responsibilities by unilaterally producing a NEPA analysis that fails to provide the required "hard look" at a range of issues, informed and identified by the participation of relevant state, federal, local, and Tribal agencies.

The EA does not identify any attempt by the NRC to invite or to ensure the participation of all relevant cooperating agencies. This unlawful approach insulates the NRC from the give-and-take NEPA analysis promotes among those agencies with jurisdiction and special expertise. Inviting the participation of "cooperating agencies" is necessary to examine the full range of infrastructure problems and environmental impacts. The participation of these cooperating agencies will allow responsible federal and state agency personnel to voice their concerns and to work with other agencies to identify and address impacts, alternatives, and mitigation measures identified in other portions of these comments.

The EA identifies many entities that are required, by law, to be invited to participate in the NEPA process. Federal agencies with expertise and/or jurisdiction over impacts of the project include the Army Corps of Engineers, Fish and Wildlife Service, Environmental Protection Agency, Federal Energy Regulatory Commission, and U.S. Department of Transportation, among others. Local and state entities include agencies from Nebraska, and Wyoming.

Relevant Indian Tribes, including the Oglala Sioux Tribe should also have been invited to participate as cooperating agencies on a government-to-government basis. Instead, the Tribal interests have been relegated to cultural and archeological interests. Other Tribal governments, including the Ute Mountain Ute Tribe located next to the proposed 11e2 byproduct disposal cells, must be invited to participate as cooperating agencies.

The “cooperating agency” requirement cannot be remedied at this late stage in the NEPA process. Instead, the NRC needs to return to the scoping stage, where the cooperating agencies can assist in constructing a NEPA analysis that reveals the full range of impacts and alternative courses of action that are familiar to the regional governments, but are largely foreign to distant NRC staff. By meeting this requirement, the analysis benefits the fullest range of federal, state, and local government agencies and the public interest.

Staff Recommendations Have Unlawfully Preceded Final EA

It is a basic requirement of NEPA that “the moment at which an agency must have a final statement ready ‘is the time at which it makes a recommendation or report on a proposal for federal action.’” *Kleppe v. Sierra Club*, 427 U.S. 390, 406 (U.S. 1976) *quoting Aberdeen & Rockfish R. Co. v. SCRAP*, 422 U.S. 289, 320 (1975) (SCRAP II).

The courts have long rejected NRC staff’s current approach as contrary to one of the substantive statutory purposes of an EIS, which “helps insure the integrity of the process of decision by precluding stubborn problems or serious criticism from being swept under the rug.” *Silva v. Lynn*, 482 F.2d 1282, 1285 (1st Cir. 1973).

Assembling and including information on outstanding issues before the EA is released for comment is a crucial part of the give and take of the NEPA process. Moreover, where comments from responsible experts or sister agencies disclose new or conflicting data or opinions that cause concern that the agency may not have fully evaluated the project and its alternatives, these comments may not simply be ignored. There must be good faith, reasoned analysis in response. *Id. See also National Audubon Society v. Hoffman*, 132 F.3d 7, 12 (2d Cir. 1997)(An EIS “‘insures the integrity of the agency process by forcing it to face those stubborn, difficult-to-answer objections without ignoring them or sweeping them under the rug’ and serves as an ‘environmental full disclosure law so that the public can weigh a project’s benefits against its environmental costs.’”).

Instead of the following the process required by NEPA, the EA has been prepared in a manner where outstanding issues are being unlawfully shielded from scrutiny of the public and other agencies, both of which are integral to the NEPA process. See 40 C.F.R. § 1508.7 (EIS must analyze direct impacts of a proposed action and the indirect and cumulative impacts of “past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”

These NEPA deficiencies must be remedied by reissuing a scoping notice that identifies these issues, and presents them for review by the public and other agencies in the NEPA document at the earliest possible time. Thereafter an EIS should be prepared in relation to the actions contemplated by the MEA.

The use of an EA and FONSI is not justified

Any FONSI must be “accompanied by a convincing statement of reasons to explain why a project’s impacts are insignificant.” *Nat’l Parks & Conservation Ass’n v. Babbitt*, 241 F.3d 722, 730 (9th Cir. 2001). “If an agency decides not to prepare an EIS, it must supply that convincing statement of reasons to explain why a project’s impacts are insignificant. The statement of reasons is crucial to determining whether the agency took a hard look at the potential environmental impact of a project.” *Native Ecosystems Council v. Tidwell*, 599 F.3d 926, 937 (9th Cir. 2010) (USFS violated NEPA in issuing FONSI based on inadequate analysis). “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. Instead, an agency must provide a reasoned explanation of its decision.” *Jones v. Gordon*, 792 F.2d 821, 828 (9th Cir. 1986). *See also, Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1213–14 (9th Cir. 1998) (EIS required where the USFS lacked information about how project may affect sediment input into streams); *Anderson v. Evans*, 350 F.3d 815, 832-35 (9th Cir. 2002) (“uncertain” impacts required EIS).

A FONSI cannot satisfy these requirements because the Draft EA lacks the critical analysis and information detailed herein – i.e., it failed to provide the “convincing statement of reasons.” “An agency is required to prepare an EIS when there are substantial questions about whether a project may cause significant degradation of the human environment.” *Native Ecosystems Council v. U.S. Forest Service*, 428 F.3d 1233, 1239 (9th Cir. 2005) (emphasis in original). “[T]his is a low standard.” *California Wilderness Coalition v. U.S.*, 631 F.3d 1072, 1097 (9th Cir. 2011). In other uranium mining situations, with far less adverse impacts and duration, for instance, the U.S. Forest Service (USFS) has prepared an EIS. For example, in Arizona, the USFS issued a Notice of Intent to Prepare an EIS for a uranium exploration project with just 10 drill sites – with no actual mining proposed in contrast to the Marsland proposal. See 73 Fed. Reg. 60233 (Oct. 10, 2008).

The determination of “significance,” as used in NEPA and as defined in Council of Environmental Quality (CEQ) regulations, requires considerations of both the context and intensity of proposed actions:

(a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a Whole (human, national), the affected region, the affected interests and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short and long term effects are relevant.

(b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action.

40 C.F.R. § 1508.27.

In determining the “intensity” of a proposed federal action, the agency is required to measure the effects of the action against the ten criteria set out in 40 C.F.R. § 1508.27. When these criteria are applied, the Marsland expansion requires an EIS because the scope of the project and the information lacking in the Draft EA meets the relatively low standard of raising a “substantial question” over whether the expansion “may” cause significant impact. Further, the Draft EA fails to present any “convincing statement” of reasons to justify a concrete finding of insignificance. Here, NRC Staff is proposing to issue a license for a mine expansion for over 1700 acres –and to increase the effective life of mine for decades. This constitutes a significant expansion that requires an EIS.

The adverse impacts of the project are controversial in that, as described herein, the Draft EA relies heavily on mitigation in order to conclude that the adverse impact of the expansion falls below the level of significance. However, for virtually all of the proposed mitigation, no data or analysis has been undertaken to demonstrate whether the proposed mitigation will be effective. Rather, the Draft EA simply lists or makes reference to mitigation – making assumptions that those measures will render impacts insignificant. These unsupported assumptions give rise to the kind of scientific uncertainty that creates the type of controversy over the level of impacts that justifies an EIS. In any case, the lack of analysis of mitigation prevents NRC Staff from being able to provide the “convincing statement” as the insignificance of the impacts, as it is required to do in order to rely on a FONSI.

Similarly, as also described herein, the Draft EA makes assumptions regarding impacts that are not supported by any concrete data. These include water, air, cultural, cumulative, connected, wildlife, and other impacts. The significance of cumulative impacts is specifically listed as one of criteria for “intensity”. The failure of the Draft EA to provide a complete cumulative impact review demonstrates the need for an EIS.

As the federal courts have held, “No matter how thorough, an EA can never substitute for preparation of an EIS, if the proposed action could significantly affect the environment.” *Anderson v. Evans*, 314 F.3d 1006, 1023 (9th Cir. 2002). The Court further explained: We stress in this regard that an EIS serves different purposes from an EA. An EA simply assesses whether there will be a significant impact on the environment. An EIS weighs any significant negative impacts of the proposed action against the positive objectives of the project. Preparation of an EIS thus ensures that decision-makers know that there is a risk of significant environmental impact and take that impact into consideration. As such, an EIS is more likely to attract the time and attention of both policymakers and the public. *Id.* See also *Sierra Club v. Marsh*, 769 F.2d 868, 874–76 (1st Cir. 1985) (holding that “under NEPA and its implementing regulations, we cannot accept [] EAs as a substitute for an EIS—despite the time, effort, and analysis that went into their production—because an EA and an EIS serve very different purposes”); 46 Fed. Reg. 18,026, 18,037 (1981) (CEQ statement advising agencies to keep EAs to not more than about 10–15 pages and stating that “[i]n most cases . . . a lengthy EA indicates that an EIS is needed”).

Accordingly, the NRC Staff should prepare an EIS for the Marsland Expansion.

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