

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of:	)	
	)	Docket No. 40-8943
CROW BUTTE RESOURCES, INC.	)	
	)	ASLBP No. 08-867-02-OLA-BD01
(License Renewal)	)	

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RESPONSE TO CONSOLIDATED INTERVENORS'  
PETITION FOR REVIEW OF LBP-16-13

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January 30, 2017

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INTRODUCTION

In accordance with 10 C.F.R. § 2.341(b)(3), Crow Butte Resources, Inc. (“Crow Butte”) hereby responds to the “Consolidated Intervenor Petition for Review,” dated January 3, 2017 (“CI Petition for Review”). The Intervenor request that the Commission grant review of the Licensing Board Memorandum and Order (LBP-16-13), dated December 6, 2016. With the exception of Contention 12B, LBP-16-13 resolved the remaining admitted contentions (Contentions A, C, D, F, 6, 9, 12A, and 14) in favor of Crow Butte and the NRC Staff. Intervenor seek review of LBP-16-13 insofar as the Board declined to make factual findings in favor of the Intervenor with respect to certain topics addressed in the evidentiary hearing.

Crow Butte opposes the Petition for Review. The Petition fails to demonstrate a substantial question for review with respect to any of the considerations identified in 10 C.F.R. § 2.341(b)(4). The Intervenor have failed to identify a clear error of fact, error of law, procedural error, or abuse of discretion by the Board, or any other question or consideration that merits review. Each of the topics raised by the Intervenor in their Petition were discussed at length in the parties’ written testimony, pursued by the Board at the oral evidentiary hearing, and resolved

in the partial initial decision. There is no basis for the Commission to revisit or second-guess the Board's factual findings or conclusions of law based on the substantial record before it.

#### STANDARD FOR REVIEW

Under 10 C.F.R. § 2.341(b)(4), the Commission may, in its discretion, grant a petition for review, “giving due weight to the existence of a substantial question” with respect to the following considerations: (1) a finding of material fact is clearly erroneous or in conflict with a finding as to the same fact in a different proceeding; (2) a necessary legal conclusion is without governing precedent or is a departure from or contrary to established law; (3) a substantial and important question of law, policy or discretion has been raised; (4) the conduct of the proceeding involved a prejudicial procedural error; or (5) any other consideration which the Commission may deem to be in the public interest. 10 C.F.R. § 2.341(b)(4)(i)-(v).

#### DISCUSSION

##### A. The Board Considered Intervenors' Evidence In Making Factual Findings On Excursion Impacts

Intervenors argue that the Board “abused its discretion and erred when it failed to make a factual finding that the long term, continuing and unexplained excursions from [Mine Unit (MU)] 6 and MU 8 are mitigated by future performance of monitoring for Uranium as a special excursion parameter under License Condition 11.1.” CI Petition for Review at 3. But, in LBP-16-13 the Board addressed the potential for operational groundwater impacts from excursions and specifically considered the identification of and corrective actions associated with vertical excursion events in MUs 6 and 8. The Board made all of the factual findings necessary for it to reach its decision. The NRC has fully satisfied the National Environmental Policy Act (“NEPA”).

The Board first notes that Crow Butte's groundwater monitoring program is designed to detect excursions of lixiviant either horizontally or vertically outside of the ore zone, including through shallow monitoring wells to detect vertical excursions. LBP-16-13 at 103. The Board explains that, should an excursion be detected, Crow Butte must notify the NRC, begin corrective action, and increase the sampling frequency for the indicator parameters. *Id.* at 105-106. Crow Butte also must complete a preliminary investigation to determine the probable cause of the excursion; adjust production or injection rates in the vicinity of the monitoring well to increase inward groundwater flow toward the production zone; pump individual wells to enhance recovery of mining solutions; and suspend injection of lixiviant into the wellfield area adjacent to the monitoring well. *Id.* at 106. The Board therefore considered Crow Butte's ability to detect and respond to excursions in its decision.

In LBP-16-13, the Board found (at 112-113) that all but one of the vertical excursions at the site were due to natural seasonal fluctuations in groundwater quality of the overlying aquifer, and that the other vertical excursion status event was not actually an excursion, but rather a spill that Crow Butte corrected and remediated. The Board acknowledged that the NRC Staff witnesses questioned whether natural seasonal fluctuations in groundwater quality of the Upper Brule Aquifer caused the vertical excursions, but nevertheless found that there was "no record evidence that the migration of lixiviant from the [ore zone] Aquifer caused these vertical excursion events." *Id.* at 112. Contrary to the Intervenor's claims that the excursions in MUs 6 and 8 were "unexplained" (CI Petition for Review at 3), the Board found that the excursion events "coincided with precipitation events." LBP-16-13 at 112; *see also id.* at 107 (noting that the Environmental Assessment ("EA") reached the same conclusion). The Board further found that Crow Butte's renewed license requires additional testing for natural

uranium when an overlying excursion monitoring well in Mine Unit 6 or Mine Unit 8 is placed on excursion status, which helps to ensure that Crow Butte addresses the cause of varying water quality data. *Id.* at 112.

Against the backdrop of the substantial evidentiary record and specific findings by the Board, the Intervenor fail to identify a basis for Commission review. While the Commission has authority to make its own *de novo* findings of fact, it generally does not exercise that authority where a Licensing Board has issued “a plausible decision that rests on carefully rendered findings of fact.” *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Facility), CLI-03-8, 58 NRC 11, 26 (2003). To invoke discretionary Commission review of Board fact findings, the intervenors must demonstrate that the Board’s findings were “clearly erroneous,” *i.e.*, “not even ‘plausible in light of the record viewed in its entirety.’” *Kenneth G. Piece* (Shorewood, Illinois), CLI-95-6, 41 NRC 381, 382 (1995). The Commission’s standard of “clear error” for overturning a Board decision “is quite high.” *PFS*, CLI-03-8, 58 NRC at 26. The record supports the Board’s findings on the technical, fact-intensive issues associated with vertical excursions. The Intervenor’s arguments cast no doubt on the validity of the Board’s factual findings and conclusions regarding vertical excursions, let alone establish that they are “clearly erroneous.”

The Intervenor further suggest on this issue that the Board’s conclusions are legally deficient to justify a conclusion of a SMALL impact—apparently because a description of monitoring and mitigation is somehow insufficient to satisfy NEPA. CI Petition for Review at 3-4. However, there is no basis for this argument. The Board made specific findings of fact on the causes of past excursions, on the monitoring and additional testing required under the renewed license, and the effectiveness of corrective actions. A monitoring program, by

definition, will detect issues only after they occur (as alleged by Intervenor). And there is no need for corrective actions until then either. This is not a violation of NEPA. NRC has fully satisfied its NEPA obligation to address potential impacts and mitigation measures, and Intervenor has not shown that additional actions should be required.

B. The Board Considered Intervenor's Evidence In Making Its Factual Findings On The Potential for Offsite Contamination and Evaporation Pond Leakage

Intervenor next claim that the Board finds that there is no evidence of contaminants migrating beyond the Licensed Area but "fails to logically connect that finding to the fact that Crow Butte is not required to test for any such contaminants because they are not excursion parameters." CI Petition for Review at 4, citing LBP-16-13 at 113. However, the Board squarely addressed the Intervenor's concern with the choice of excursion parameters in its decision:

We further find that there is no record evidence compelling Crow Butte to sample for uranium in addition to the three excursion indicators, i.e., chloride, conductivity, and total alkalinity.

\* \* \*

Although Intervenor's witnesses asserted that Crow Butte should be required routinely to test its samples for uranium (in addition to the three excursion indicators), we find that there is no record evidence that the addition of uranium as a standard excursion indicator would provide any significant information beyond that obtained from using only chloride, conductivity, and total alkalinity. Given the retardation uranium would likely encounter in the License Area's subsurface environment, we find that it is not reasonable to require testing for uranium. Furthermore, three of the NRC Staff's guidance documents discourage using uranium as an initial excursion indicator. And, while Intervenor's recommendation to introduce conservative tracers into the mine field could be scientifically sound, neither Dr. Kreamer nor Mr. Wireman could explain why chloride, conductivity, and total alkalinity do not already serve the same function as would these tracers.

LBP-16-13 at 140-141 (footnotes omitted). The Board ultimately concluded that "Crow Butte's selection of parameters to test for groundwater contamination and its obligation to continue to



test for those parameters in its renewed license is sufficient to detect migration of groundwater constituents, including uranium.” *Id.* at 199. Intervenors present no basis in the record for the Commission to find this conclusion to be erroneous.

Intervenors also claim that there are “unexplained increases in radioactive Lead-210 readings at the English Creek drainage.” CI Petition for Review at 4. But, the Board considered the evidence and addressed surface water impacts in its decision. The Board noted that Crow Butte conducts quarterly sampling of English Creek and analyzes sediment samples for natural uranium, radium, and lead-210. LBP-16-13 at 146-147. The Board also noted the EA’s conclusion that monitoring data shows “no clear indication of downstream contamination from surface spills or leaks.” *Id.* at 147-148, citing EA § 4.6.1.2 at 83-84. Ultimately, the Board found that the EA considers all reasonably foreseeable impacts that an accident might have on surface waters, including Squaw Creek, English Creek, and the White River. *Id.* at 155. The Board therefore concurred with the EA’s conclusion that surface water impacts are SMALL. *Id.* at 155-156. Intervenors point to nothing in the record to indicate that this conclusion is in error.

Intervenors further allege that the Board erred in failing to find that evaporation pond liners are subject to deterioration and that there may be unknown leaks through the bottom of the evaporation pond. CI Petition for Review at 5. But, the Board specifically addressed Intervenors’ claim that Crow Butte’s wastewater evaporation ponds might release contaminants that could ultimately reach the Pine Ridge Reservation. The Board found “no record evidence” to support this claim. LBP-16-13 at 159. The Board explained that Crow Butte minimized potential leaks and spills from evaporation ponds by installing primary and secondary impermeable liners with leak detection systems between the liners, as recommended in NRC Regulatory Guide 3.11, and by conducting daily inspections of the ponds. The Board also

concluded that there is no record evidence to support the Intervenor's witness's claim that the liner material for Crow Butte's wastewater evaporation ponds will degrade soon after its two-year warranty period. *Id.*

Likewise, the Board's decision was not clearly erroneous with respect to the likelihood and potential impact of small chronic leaks of mining fluid. The Board found that "there is no record evidence that [small chronic pipe leaks] would be likely to occur in the future or that, even were they to occur, they would have significant impacts." *Id.* at 154. The Intervenor has cited no evidence in the record to show that this conclusion was in doubt, much less that it is "clearly erroneous."

At bottom, the Board's decision with respect to excursion parameters, surface water impacts, and leaks and spills is based on sound reasoning and is well-supported by the record. The Board obtained written evidence, heard oral argument and testimony, and ultimately addressed the issues on the merits. Where the Board's decision rests on its own carefully rendered factual findings, the Commission has repeatedly declined to second-guess Board decisions. *See, e.g., Carolina Power & Light Co. (Shearon Harris Nuclear Power Plant)*, CLI-01-11, 53 NRC 370, 391 (2001). Here, the Intervenor has presented no reason for the Commission to second-guess the Board's factual findings on impacts to surface waters or groundwater, which were made based on the extensive record before it.

C. The Board Did Not Abuse Its Discretion By Considering Available Evidence On Earthquakes And Tornadoes

Contrary to the Intervenor's assertions (at 6), it was not an abuse of discretion for the Board to supplement the final EA with evidence presented at the hearing. In determining whether the EA should have included additional information, the Board may consider the record as a whole. Commission precedent holds that the adjudicatory record and a licensing board

decision become part of the NEPA record of decision.<sup>1</sup> In NRC licensing proceedings, “the ultimate NEPA judgments regarding a facility can be made on the basis of the entire record before a presiding officer, such that the [NRC Staff NEPA document] can be deemed amended *pro tanto*.” *Louisiana Energy Servs.* (National Enrichment Facility), LBP-05-13, 61 NRC 385, 404 (2005). Therefore, the Board’s decision to consider the full record before it, including the testimony and exhibits at the hearing, is not an abuse of discretion and, in fact, is consistent with longstanding Commission precedent and sound regulatory practice.

D. The Board’s Assessment of Aquifer Pumping Test Data Is Supported By The Record

The Intervenor conclude by claiming that the Board’s findings regarding an aquifer pumping test “misrepresent Intervenor’s position, rely on mistaken interpretations of data by CBR and NRC Staff, and are clearly erroneous.” CI Petition for Review at 6-7. This portion of the petition for review again is asking the Commission to make its own *de novo* findings of fact on issues thoroughly ventilated at the hearing and considered by the Board in its decision. As noted above, the Commission’s standard of “clear error” for overturning a Board decision “is quite high.” *PFS*, CLI-03-8, 58 NRC at 26. As discussed below, Intervenor’s petition does not cast on the validity of the Board’s factual findings and conclusions with respect to aquifer pumping tests, much less demonstrate reliance on a “clearly erroneous” finding. Instead, the Intervenor seek to re-argue positions considered, and rejected, by the Board.

The Board considered aquifer pumping test data as part of the evidentiary hearing. The Board summarized and reviewed four aquifer pumping tests performed within the license

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<sup>1</sup> See, e.g., *Louisiana Energy Servs.* (National Enrichment Facility), CLI-06-15, 63 NRC 687, 707 n. 91 (“Adjudicatory findings on NEPA issues, including our own in this decision, become part of the environmental ‘record of decision’ and in effect supplement the FEIS.”); *LES*, CLI-98-3, 47 NRC at 89 (“In NRC licensing adjudications ... it is the Licensing Board that compiles the final environmental ‘record of decision’ . . . . The adjudicatory record and Board decision . . . become, in effect, part of the FEIS.”).

area to evaluate aquifer properties and the integrity of the confining layer across the site. LBP-16-13 at 53-75. The Board specifically noted Dr. Kreamer's assertion that early drawdown data indicated potential aquifer leakage, as well as responses to that assertion by Crow Butte and NRC Staff witnesses. *Id.* at 61-63 and 64-66. The Board ultimately concluded that "[a]ll four pumping tests indicated that there is no hydraulic connection between the Upper Brule Aquifer and the [ore zone] Aquifer." *Id.* at 73. The Board specifically rejected Dr. Kreamer's attempts to discredit Crow Butte's aquifer pumping tests using early-time drawdown data. The Board concluded that relying upon early-time drawdown data is inconsistent with aquifer testing guidance and that the use of later-time drawdown data is superior for estimating aquifer parameters and detecting leakage. LBP-16-13 at 74. The Board also found that Crow Butte analyzed aquifer pumping test data by using well-established and professionally-accepted methods that have been incorporated into the American Society of Testing and Materials standards. *Id.* The Board therefore carefully considered and rejected Intervenor's concerns regarding the conclusions drawn by Crow Butte and the NRC Staff based on aquifer pumping test data.

The Board's consideration of aquifer pumping test data is precisely the type of factual assessment that the Commission relies on the Board to make in the first instance. The Board's findings of fact have clear support in the record. There is no evidence that the Board overlooked important evidence or testimony in assessing aquifer pumping test data. Where, as here, the Board weighed arguments presented by numerous experts, considered voluminous exhibits, and rendered reasonable record-based determinations, the Commission should defer to the Board's factual findings. Because the Intervenor has not shown that the Board decision

was based on clearly erroneous findings — that is, findings not even plausible in light of the record reviewed in its entirety — the Commission should deny the petition for review.

CONCLUSION

The Commission should deny the petition for review and affirm the Board's decision in LBP-16-13 resolving Contentions A, C, D, F, 6, 9, 12A, and 14 in Crow Butte's favor.

Respectfully submitted,

/s/ signed electronically by  
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RESOURCES, INC.

Dated at San Francisco, California  
this 30th day of January 2017

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CERTIFICATE OF SERVICE

I hereby certify that copies of “RESPONSE TO CONSOLIDATED INTERVENORS’ PETITION FOR REVIEW OF LBP-16-13” in the captioned proceeding have been served this 30th day of January 2017 via electronic mail to Consolidated Intervenor at [davidcoryfrankel@gmail.com](mailto:davidcoryfrankel@gmail.com), [Arm.legal@gmail.com](mailto:Arm.legal@gmail.com), and [harmonicengineering@gmail.com](mailto:harmonicengineering@gmail.com) and via the Electronic Information Exchange (“EIE”), which to the best of my knowledge resulted in transmittal of the foregoing to all those on the EIE Service List for the captioned proceeding other than Consolidated Intervenor.

/s/ signed electronically by \_\_\_\_\_  
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